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Educational News and Editorial Comment

CHANGE IN SUBSCRIPTION PRICE

The *School Review* has maintained its original subscription price of $1.50 from the beginning of its history. This price is now to be changed to $2.50. Renewals and new subscriptions received from this date will be at the new rate.

Elaborate explanation of the change in price is hardly necessary. One item will illustrate the situation. Less than two years ago the business manager called attention to the fact that the blank paper in a single copy of the *School Review* cost five cents. For the last issues this figure has been very nearly eight cents.

The *School Review* is published monthly from September to June by the University of Chicago. It is edited and managed by the Department of Education as one of a series of educational publications. The series, including also the *Elementary School Journal* and the *Supplementary Educational Monographs*, is under a joint editorial committee and covers the entire field of educational interests.

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It is hoped that the change in price will not diminish the circulation of the *School Review*. During the last year the circulation increased 30 per cent. It is the purpose of the editors to maintain the quality of the *School Review* and to show a like increase during the year to come.

THE NORTH CENTRAL ASSOCIATION

The March, 1920, meeting of the North Central Association has been reported in part to readers of the *School Review* in two articles, one by Professor Davis in the April issue, and one by President Hughes in this issue.

One matter of business which came before the association is worth adding because it indicates the steady progress of the movement toward co-operative standardization for which this association has stood from the date of its organization.

A request was received from the Northwest Association of Secondary and Higher Schools for recognition of the lists of approved institutions prepared at the meetings of this new association which are to be held annually at Spokane in conjunction with the Inland Empire Teachers' Association.

The new association includes at the present time Oregon, Washington, Idaho, and Montana. It has been adopting standards and preparing lists of approved high schools during the last four years. This year it is to take up the problem of an approved list of colleges. The standards adopted are like those of the North Central Association.

The older association voted to send a delegate to the Spokane meeting, and there will doubtless follow a mutual acceptance of approved lists.

The advantages which arise from the development of such a separate organization are those which come with intimate discussion by relatively small groups of inspectors of the problems which belong to their special territory. Such intimate conferences can be held from year to year with the confident expectation that there will be a full representation of the states involved. The territory of the North Central Association has become so great that it is not easy for the states remote from the place of meeting to send delegates regularly.

The relation thus established between the North Central Association and the new association in the west parallels in purpose

and form the relation which has existed for some years past between the North Central Association and the Association of Colleges and Secondary Schools of the Southern States. Here, again, common standards and an interchange of delegates have made it possible to unify methods of approval and of standardization.

It remains for the southwestern states, a number of which are now in the North Central Association, to complete the organization with California and Nevada, and the whole territory west of the Alleghany Mountains will be on a basis of accrediting high schools and colleges which is nearly uniform.

There is some indication also that the New England Association will be reconstructed along lines similar to those followed by the western and central associations. It may be possible in the not distant future to organize by representation from these regional associations a central body which will represent, as no other body has, higher education for the whole country.

REORGANIZED MATHEMATICS

It is a source of great satisfaction to those of our colleagues who have been teaching combination mathematics in the University High School of the University of Chicago to note the progress which is being made toward the general adoption of what has been done in this institution for some time. The frank imitation of Mr. Breslich's books by recent publications is the highest possible compliment to the work which he has patiently carried on for years. Indeed, one is led to offer the comment that the imitation exhibited in certain recent texts would have been in somewhat better form if it had been even franker.

The latest indication that there will be a general landslide very shortly toward this type of mathematics appears in the report of the National Committee on Mathematical Requirements. This report does not refer the reader explicitly to Mr. Breslich's articles written when he encountered the bitterest opposition of the conservatives in the early days of his publication. But then the committee is not especially concerned with history, and it is no part of its present problem to recanvass Professor Moore's presidential address before the Mathematical Association of America and Professor Myers' subsequent discussions which inaugurated this movement. The committee is very properly concerned solely

with the remaking of the antiquated and outworn high-school course in mathematics. In this effort it ought to have the heartiest co-operation of all progressive workers in the high-school field. In the spirit of unqualified approval of the recommendations now made we devote space to a few quotations and are glad also to say to high-school teachers that if they want to find these recommendations in full operation after a number of years of antecedent trial they should consult Mr. Breslich and his publications or visit the classes in his department.

The report from which the following quotations are extracted is published by the Bureau of Education as *Secondary School Circular No. 5.*

It is recognized that in the earlier periods of instruction the strictly logical organization of subject-matter is of less importance than the acquisition, on the part of the pupil, of experience as to facts and methods of attack on significant problems, of the power to see relations, and of training in accurate thinking in terms of such relations. Care must be taken, however, through the dominance of the course by certain general ideas that it does not become a collection of isolated and unrelated details.

Continued emphasis throughout the course must be placed on the development of power in applying ideas, processes, and principles to concrete problems rather than to the acquisition of mere facility or skill in manipulation. The excessive emphasis now commonly placed on manipulation is one of the main obstacles to intelligent progress. On the side of algebra, the ability to understand its language and to use it intelligently, the ability to analyze a problem, to formulate it mathematically, and to interpret the result must be dominant aims. *Drill in algebraic manipulation should be limited to those processes and to the degree of complexity required for a thorough understanding of principles and for probable applications either in common life or in subsequent mathematics.* It must be conceived throughout as a means to an end, not as an end in itself. Within these limits, skill in algebraic manipulation is important, and drill in this subject should be extended far enough to enable students to carry out the fundamentally essential processes accurately and expeditiously.

On the side of geometry, it is felt that the work in formal demonstrative geometry must be preceded by a reasonable amount of informal work of an intuitive, experimental, and constructive character. Such work is of great value in itself; it is needed also to provide the necessary familiarity with geometric ideas, forms, and relations, on the basis of which alone intelligent appreciation of formal demonstrative work is feasible.

Most, if not all, of the material suggested in this report is of sufficient importance for every educated person to warrant making it a requirement for all pupils. In view of the fact that large numbers of students, either because they leave school or because the further study in mathematics is not required in the

school they are attending, do not study mathematics beyond the ninth grade, it is felt that the first year's work should make the student acquainted with as broad a foundation of mathematical training as is consistent with sound scholarship. In particular, the course should contain both algebra and geometry, with at least an indication of the nature of a geometric demonstration.

It is therefore suggested that in the first year (ninth grade) about two-thirds of the time be devoted to the most useful parts of algebra, the numerical topics of intuitional geometry and the beginnings of trigonometry, and about one-third of the time to geometry, including both the necessary informal introduction (if this has not been provided for in earlier grades) and the first part of demonstrative geometry.

The second year's program would then cover further work in algebra, demonstrative geometry, and trigonometry. If the student has had a satisfactory course in intuitional geometry before the ninth grade, he may find it possible to cover a minimum course in demonstrative geometry, giving the great basal theorems and constructions, together with exercises, fairly well in the ninety periods constituting a half year's work. If he had not had such earlier instruction a full year should probably be devoted to geometry, both informal and demonstrative, which may, however, as indicated, be divided between the ninth and tenth grades. Additional courses should be offered in the third and fourth years of the secondary school to enable students who so desire to continue their study of mathematics.

AMERICAN COUNCIL ON EDUCATION

There is a new educational organization which promises to be of importance in unifying the educational interests of the country. It grew out of the emergency council which was called together by the institutions of higher education when the United States went into the war. The purpose and general character of the American Council on Education are set forth by Mr. Capen, its director, in an editorial which he publishes in the first issue of the *Educational Record*. The *Educational Record* devotes twenty-six pages to a summary of the educational bills now before Congress and gives the remainder of the issue to a description of the council. The editorial is in part as follows:

The American Council on Education is the central organization in which the great national educational associations are represented. Its general object is to promote and carry out co-operative action in matters of common interest to the associations and to the institutions composing them. It has three classes of members: constituent, associate, and institutional. The constituent members are sixteen national educational associations. Each is represented by three delegates who vote as a unit at meetings of the council through a designated person. Associate members are educational or scientific organizations having interests related to the work of the council. Associate members may send one

representative each to the meetings of the council without right to vote. Institutional members are colleges, universities, professional and technical schools, contributing not less than $100 a year to the treasury of the council. Each may be represented by one delegate at meetings of the council without right to vote.

The officers of the council are elected annually. Its headquarters are in Washington at 818 Connecticut Avenue. They are in charge of a director with assistants.

Each of the council's major projects is in charge of a standing committee. The following are the undertakings in which progress has already been made or which have been authorized by the Executive Committee.

1. Federal legislation.—It is of the first importance that the educational interests of the country should be instructed as to the existence and purport of proposed federal legislation affecting education. The council's office has digested the seventy odd educational bills now before Congress. A classified summary of the more important of them appears in this issue of the *Educational Record*. It will be followed in later issues by critical analyses and discussion of the principles involved in the more far-reaching legislative measures. This undertaking is in charge of a standing Committee on Federal Legislation.

2. International educational relations.—During the past eighteen months, some eight or nine different agencies have entered the field of international education to the confusion both of foreign educational officers and of the educational interests of the United States. The council has succeeded in bringing about a working agreement between a number of these bodies so that duplication may be avoided and the situation made clear to foreigners. It hopes to effect a still greater consolidation of these activities in the near future. Probably, in view of the large number of bodies now operating in this field, the council will not itself take a very prominent part in the promotion of international exchanges of professors and students. It has agreed, however, to be responsible for an effort to bring about a uniform treatment by American universities of foreign degree holders. It has also agreed to interpret to foreign educational officials existing lists of approved institutions. It will, of course, participate in the entertainment of any official foreign delegation of scholars. These matters are in charge of a standing Committee on International Educational Relations.

3. Education for citizenship.—The council has a standing Committee on Education for Citizenship, including military training. The committee proposes to study and report on education for citizenship in higher institutions and teacher-training agencies with particular reference to questions of military training. It expects also to review the work of various committees on education for citizenship which have been appointed by other educational associations and to make a final report which will combine the basic principles and recommendations upon which all agree.

4. Training of women for public service.—A standing Committee on the Training of Women for Public Service is the successor of a committee which functioned effectively during the war. Its plans are not yet completed. Its purpose is, however, to study the possible openings for highly-trained women in the public service, the qualifications required, and the kind of academic training best adapted to meet the various needs.

5. The college of liberal arts.—The executive committee has authorized the appointment of a standing Committee on the Status and Problems of the College of Arts and Sciences. The committee has not yet been appointed, but it is assumed that it will make a comprehensive study of the present relations of the college of arts and sciences to the university and professional schools, to the vocational schools on the same academic level, such as schools of commerce, journalism, and engineering, to the junior college, etc. It will also undoubtedly consider the fundamental aims of colleges of liberal arts with a view to formulating a definition of this type of institution appropriate to the present time.

6. Standardization.—The council also proposes to bring about a greater uniformity of procedure among the principal agencies now engaged in defining college standards. To this end the executive committee of the council has authorized the appointment of a committee which shall be composed of representatives of the principal standardizing bodies.

The council also has a standing Committee on Co-operating Societies and a Finance Committee.

The sixteen institutional members of the council are as follows:

1. Association of American Universities.
2. National Association of State Universities.
3. Association of American Colleges.
4. Association of Urban Universities.
5. Catholic Educational Association.
6. Association of American Agricultural Colleges and Experiment Stations.
7. Society for the Promotion of Engineering Education.
8. Association of American Law Schools.
9. Association of American Medical Colleges.
10. National Research Council.
11. American Association of University Professors.
12. Association of Collegiate Alumnae.
13. National Education Association.
14. N.E.A.—Department of Superintendence.
15. National Council of Normal School Presidents and Principals.
16. Council on Medical Education of the American Medical Association.

CURRENT SCIENCE MATERIAL

The *Popular Science Monthly* issues each month service sheets for teachers of science and manual arts in which a brief summary is given of the articles in this journal which can be employed as current science material for high-school classes. We are very glad to call attention to these service sheets and to indicate the usefulness of this kind of summary of magazine material for the schools. The statement made by the editor of the service sheets with regard to the purpose and methods of employing this material is as follows:

The purpose of these service sheets is to arouse new interest in the classroom work by showing the pupils how closely the facts they learn from the textbook and laboratory are connected with the practical things of life.

Even the teacher will keep his enthusiasm at top-notch by being abreast of the times in his knowledge of the new and improved ideas in electricity, wireless, automobiles, airplanes, manual training, machinery, biology, and in fact everything that is happening in the world of science.

The heavy-face headings should first be examined for articles applying to topics to be studied during the current month. A schedule should be prepared of the timely articles so that assignments of topics may be made to different pupils for reading and report.

It is suggested that a half-hour or more be used each week to discuss the new ideas on some one subject, such as electricity or automobiles, that appears in the current issue of the *Popular Science Monthly*.

Encourage the pupils to keep a note-book, with their "write-up" of the various ideas found in the *Popular Science Monthly* illustrated by the pictures cut from the magazine.

After assignments for the current month have been selected, the items on the service sheets should be cut apart and pasted on library cards. After the month has passed, articles that may be used in "reviews," or with later classes, should be filed topically. They are already indexed for filing. Very short articles may be themselves pasted on cards. As the file grows, it will be found a valuable storehouse of practical applications.

ANNUAL MEETING OF THE N. E. A.

The following statement regarding the summer meeting of the National Education Association is issued by the secretary:

The next annual meeting of the National Education Association will be held at Salt Lake City, Utah, July 4-10, inclusive. The program is nearing completion and will be printed in the next issue of the *N. E. A. Bulletin*.

A feature of the program will be the Congress of Boards of Education on Thursday, July 8, forenoon, afternoon, and evening. Theme: "Financing and Managing the Public Schools." Members of school boards, state, city, and county superintendents, and educational experts will take part in the discussions.

The congress will meet in two sections on Thursday forenoon, one section to consider rural-school problems and the other to consider the financial problems of the city school. It will meet in one body Thursday afternoon and Thursday evening. Several eminent men and women have accepted places on the program.

The following are among the subjects of addresses and symposiums on the general program:

The Survival of the Professional Spirit Despite Economic Pressure and Social Unrest.

The Recognition of Education as Related to Our National Life.

The Necessity of the Unity of the Profession in Obtaining Needed Legislation.

The Proper Relation of the Superintendent and Board of Education to the Teaching Body with Respect to Administration.

The Proper Relation of the Classroom Teacher to the Superintendent and Board of Education with Respect to Administration.
The Relation of Teacher Shortage to Educational Standards.
Legal Status of the City Superintendents of Schools.
Fiscal Independence of City Boards of Education.
Shortage of Teachers in Rural Communities, a National Calamity.
The Extension of Education in Country Life.

The Council of State Superintendents will hold an important two days' conference preceding the general sessions. The National Council will hold its sessions on Monday, July 5.

Sunday, July 4, will be designated on the program as Musical Sunday. The program of patriotic music under the auspices of the teachers and musical associations of Salt Lake City and the State of Utah means that Musical Sunday will be one of the great days of the convention.

All general sessions will be held in the world-renowned Tabernacle of the Mormon Church.

The preparation of the program for this great meeting is in the hands of the president of the association, Mrs. Josephine Corliss Preston, who not only takes into account in the program the actual needs of the hour but looks ahead to shape readjustments and tendencies for the future welfare of our schools.

SUMMER SCHOOLS

The output of the Institute for Public Service is sent to the *School Review* and is read along with the other items that go to make up the editor's task of keeping abreast of all sorts and kinds of opinion. Most of this output passes without exciting any desire to print it. The following picture of a royal road to learning can hardly be omitted, however, without injustice to the great throng of teachers and other school officers who summer after summer submit themselves to the operations of "academic treadmills." The author of this diatribe seems to have been unfortunate in his acquaintances, judging from the remarks to which he listens.

A new kind of summer school for teachers is suggested by the Institute for Public Service in a recent bulletin. At this school there will be no recitations, no lectures, no textbooks, no library assignments, no class texts. In place of the regular routine are substituted hikes, swimming, tennis, golf, dancing, round-table conferences, private talks about individual problems, and opportunities for frank discussion with educators of proven ability.

Are teacher-students satisfied with the present type of summer schools? To what extent is school work improved by attendance or do teachers attend in order to secure, by attendance, an increased salary, better position, another degree or certificate? Those in charge of summer schools have no right to sacrifice education for academic credit. Too many teachers are being passed through the same mill irrespective of ability, training, or physical condition. Teachers below par physically ought to be excluded from book work. Others who think

only "shop" should be refused "shop" courses. Able teachers should not spend six weeks learning the "XYZ" method written by someone who has never put the method in use under actual working conditions.

The aims and methods of summer schools need revision; get away from the academic treadmill; more discussion, less lectures; more individual development, less textbooks; more specific problems, less generalization. When a principal or teacher after a summer-school attendance says, as many do, "I can't think of one thing that I have done that will specifically benefit my school work next year," then it is time for directors to remove the "dud" courses.

The objection, of course, to a summer school whose final test is color added, weight gained or lost, vitality developed, independent thinking fostered, is that it won't work unless academic credit is given. However, if teachers will tell frankly their needs, superintendents, boards of education, higher institutions will soon begin to recognize growth from self-development and courses in outing-conference-health schools.

RELIGIOUS EDUCATION

Religious education is developing rapidly for good or ill through unceasing propaganda. In view of this condition the Council of the Religious Education Association at its annual meeting in Pittsburgh, March 19-21, adopted as the general theme for the meeting "The Formation of Public Opinion." The subject was discussed from the point of view of "Sources and Objects of Propaganda," the "Technique of Propaganda," and the "Psychology of Opinion Forming." Reports were submitted on the "Press and Advertising," "Publicity Men," "Public Speaking," "Campaigns and Drives," "Motion Pictures," "Higher Education," and other phases.

Other sessions were devoted to the discussion of related themes considered from the point of view of special fields. The section of Bible Teachers in Colleges discussed "The Best Methods of Teaching Biblical Subjects," "How Shall We Relate Biblical Teaching to Other Subjects in the College?" "Professional Standards in Biblical Teaching," "Organization and Administration of Courses in Religious Education," "The Curriculum and the College Department of Religious Education," and "Religious Educational Values of Non-Curricula Courses."

Important papers, among them one on "Sex Education in the Seminary Course," were discussed before the department of Theological Seminaries.

As usual, the department of Christian Associations presented an afternoon's program discussing "Community Agencies Working with Girls and Women," and "Community Agencies Working with Boys and Men."

Perhaps the subject which chiefly interested those who are studying the problem of the religious education of children was the discussion of plans for initiating and conducting systems of week-day instruction in religion. To those who are engaged in secular education this is a very important matter, for it must necessarily involve a certain amount of co-operation on the part of public and private secondary schools. Reports of outstanding experiments are not as yet such as to satisfy fully the ideals of religious education for which the best leaders in this field stand, nor are any plans which have been proposed for carrying out the work wholly satisfactory to the day schools. It is clear that something is coming in the way of the correlation of religious education with general education, and that a program must be prepared which will satisfy the necessity for the exclusion from the public schools of anything which can be termed sectarian even by those who disapprove of it. The tendency seems to be to place upon the churches a heavy educational responsibility for which they are not well prepared. The indications are, however, that they are becoming aware of this, and that through many instrumentalities they are seeking counsel in relation to methods and material, and that the contributions of thinking men and women in the field of education are earnestly desired.

Not the least important of the sessions of the convention was that of the Department of Educational Directors in Local Churches, membership in which requires technical preparation of a high degree. Papers were presented on "Training in Citizenship," "The Inter-Church Survey of Religious Education," "Next Steps in a National Program of Religious Education," and "Possibilities of City-Wide Religious Education."

The Religious Education Association numbers three or four thousand in its membership and publishes all papers given at its convention in its official organ, *Religious Education*.

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ETHICS IN HUGHES' TEXTBOOK ON CIVICS

I have read with very great interest the April number of the *School Review*, especially the reports presented at the Cleveland meeting. Anything concerning the subjects of these reports cannot fail to command my interest, and I must confess an added

stimulus to such interest because of the mention in one report, and analysis in the other, of my *Community Civics*.

Without wishing to say anything that will in the least degree be considered a complaint against the statements made in the report read by Dr. Judd and based upon an analysis of certain textbooks made by Mr. Brooks, I should be glad to have the privilege of stating a question raised in my mind by this analysis, as far as it concerns *Community Civics*.

Mr. Brooks says: "All discussions that develop standards of conduct have been classed as *Ethics*," regardless of the source of such discussions. Then when he analyzes *Community Civics* he finds every one of his categories represented except ethics.

Now I should be greatly disappointed if anyone, from this analysis or any other source, should get the impression that the book is entirely a collection of facts and statistics. It is true that no chapter is given a title that directly suggests ethics; but several sections, at least, seem to me to be more ethics than anything else and to come distinctly within Mr. Brooks' definition of the term. I realize, however, that there may be room for an honest difference of opinion on this point and am not disposed to quarrel over it.

I do wish to make clear, lest anyone should get an impression to the contrary, that I strongly believe that the study of the social sciences should by all means result in the setting up of sound and strong ethical standards. I hoped that sound ethical principles might be inculcated all the way through *Community Civics*. It is often better, I think, to get the ethics in incidentally than to do a great deal of dogmatic preaching; but I surely intended that the ethics should be in the book, even though it may be camouflaged.

A prominent Pittsburgh teacher recently expressed to me a sense of surprise that two books intended distinctly for the study of vocational guidance should have been included in the report for comparison with textbooks of a more general character. I pass on this criticism, like that expressed above, not in any spirit of faultfinding, but simply for what it is worth. The committees whose reports were presented at Cleveland have done a work of great value, and I should be pleased to co-operate with them in every way possible—not in the least to be unduly critical of the careful studies which they have made.

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NEWS ITEMS FROM SECONDARY SCHOOLS

GRADING ENGLISH

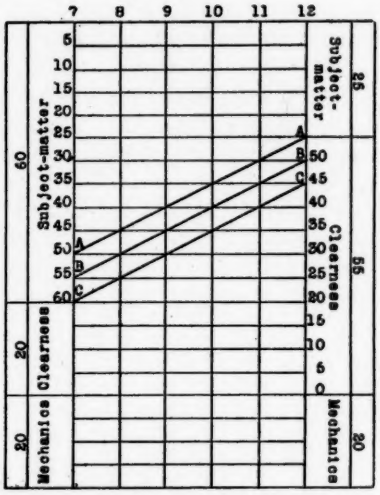
Faribault High School, Faribault, Minnesota.—A system of credits is used in evaluating composition work of junior and senior high-school pupils. The graph shows the six classes of the two schools, each class being separated into C, B, and A groups according to individual differences in ability. It shows that excellence in expression is considered dependent upon correct mechanics, clearness, and subject-matter. English is graded by every instructor in every classroom. In fact, some of the best English work is accomplished by the head of the chemistry department. The C pupils, B pupils, and A pupils are marked according to the way in which they can assimilate material, and we find that *definiteness and clearness of expression is the best means of judging the intelligence of the child*, that is, *credit* for *English* and *credit* for *subject-matter* go hand in hand. All teachers of all departments are supervisors of expression because expression is the test of their pupils' intelligence in the subject-matter they teach. The school seems to be approaching English, oral and written, from the correct point of view.

Mechanics is awarded 20 per cent credit throughout the 18 sections of the six grades. Be it understood that the two schools in Faribault have a carefully worked out system of minimum essentials in English, elements of increasing difficulty being added for each year of school life. Moreover, pupils of C standing are not held to requirements as difficult as their classmates of B or A standing. Carrying out further the principle of individual instruction, we cause pupils to fail who score 90 per cent when they should be making 95 per cent, whereas we pass pupils who are scoring but 70 per cent when they are capable of producing but 70 per cent. The scale of minimal essentials, increasing in difficulty grade by grade, is justification for according as much credit to a twelfth-grade pupil as to a seventh-grade pupil.

By clearness is meant the relation of thought to subject-matter, including important rhetorical considerations which are also scaled according to difficulty for the advancing types and grades. Very suggestive is the chart in showing that the relative value of clearness increases 5 per cent with successive types in the same grade, and 5 per cent with the same type in successive grades. On the

contrary, credits for mastery of subject-matter gradually diminish type by type and grade by grade. In the seventh grade an understanding of the subject-matter is awarded 60 per cent for C type

		Mechanics	Clearness	Subject-matter
7	C	20	20	60
	B	20	25	55
	A	20	30	50
8	C	20	25	55
	B	20	30	50
	A	20	36	45
9	C	20	30	50
	B	20	35	45
	A	20	40	40
10	C	20	35	45
	B	20	40	40
	A	20	45	35
11	C	20	40	40
	B	20	45	35
	A	20	50	30
12	C	20	45	35
	B	20	50	30
	A	20	55	25



Graph illustrating the variation in the relative values of clearness, subject-matter, and mechanics of English for successive grades and types of pupils. The relative value of clearness of expression increases 5 per cent with successive types in the same grade and 5 per cent with the same type in successive grades. The relative value of subject-matter decreases at the same rates. The relative value of the mechanics of English is constant.

pupils, in the twelfth only 35 per cent, because, in the opinion of the educational leaders of Faribault, information is to be estimated in terms of its *functional* value. A pupil is largely judged in intelligence by the *use* he can make of subject-matter.

JOHN MONROE

News Items from the School of Education of the University of Chicago

HOME ECONOMICS COURSES DURING THE SUMMER QUARTER

The field of home economics for women is fast expanding, whether they be teachers in colleges or public schools, supervisors, social workers, or institutional directors. It is to meet their various needs as far as possible that this summer's courses are planned.

Home economics education.—In the several lines leading to the Master's degree, much work is to be given this summer. The sequence in home economics education includes courses in methods of teaching home economics, in advanced subject-matter, and in education. It is expected that the monograph, "Home Economics in American Schools," will be used as a basis for one of the courses. Dean Gray will take up the problems of the home economics supervisor in his work on supervision. Most of these courses are also open to advanced undergraduates.

Food and nutrition.—A second line of graduate and undergraduate work obtainable this summer is that in food and nutrition, comprising courses in food chemistry, nutrition, dietaries, food preparation, and experimental cooking. Of the two courses in experimental cooking, the more advanced will include lectures on what has already been accomplished and laboratory work on special individual problems. The course in elementary food preparation will be taught by Miss Louise Lacey of the Simmons College faculty. The food chemistry and nutrition courses are planned as usual to give an understanding of the scope of this important field and especially a basis for scientific work in dietaries. The course of readings in nutrition will include a study of some of the recent literature on the subject. Some of the researches along these lines now in progress by the advanced students are metabolism experiments with the new Benedict portable respiration apparatus, work on child diets, and changes in fat during cooking.

Child health.—An important new feature this summer is the Child Health School on the University campus, designed to give

training in nutrition work with children. Miss Roberts, recently returned to the University after having completed a nutrition survey for the Children's Bureau, will be director of the school, with Dr. Mendenhall of the Children's Bureau and Dr. Hoffmann of Rush Medical School as medical advisers. A course deserving special mention is the nutrition and dietaries course planned for teachers, social workers, or students interested in the problems of nutrition, especially of children. There are thus three courses in dietaries, all having connection with the Child Health School. It is the hope of the department that this work will result in a real contribution to public health. Dr. Mendenhall will also give two courses in child care. The department is fortunate in having secured this child specialist for the first term this summer.

Practice house.—Practice housework is another new feature, designed to prepare the student to be a more effective teacher of home management. Courses will also be given in the theoretical side of household organization and in the mechanical care of the house.

Institution economics.—The courses in institution economics deal with the special problems of large quantity cooking, organization of the school lunchroom and other public and private institutions; the selection, installation, and operation of equipment; problems of administration; and the study of food commodities as a basis for intelligent buying. They furnish preparation for teaching institution work in colleges or universities, for supervisors of high-school lunchrooms, for business directors of college dormitories, and for administrators in welfare work and in the commercial world.

Household art.—The courses in household art have also been extended. They include the usual courses in elementary and advanced garment construction, costume design (two sections each term), and millinery. In house planning and decoration, both elementary and advanced courses are offered. The great interest recently aroused in textile standardization, manifested by the committee in the American Home Economics Association and by legislation pending before Congress, is met not only by the elementary textile course but also by an advanced course given by Mrs. Mary G. Supple, instructor in chemistry at Lewis Institute, formerly a member of the staff of the textile laboratory at Sears, Roebuck and Company.

RATING SCALES FOR PUPILS' DYNAMIC QUALITIES: STANDARDIZING METHODS OF JUDGING HUMAN CHARACTER

H. O. RUGG
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The principal aim of this article is to report a new type of measuring instrument for certain important traits in high-school students. In doing so, however, the writer wishes to suggest an outline scheme of thinking concerning the measurement of mental processes and to point out the direction in which new studies of measurement are needed.

Educational measurement as a movement has eventuated.—It is accepted generally by public-school administrators. More than one hundred educational tests and scales are being used in the public schools of the country. Some of these scales have considerable scientific validity. Many of them, however, are almost valueless as scientific instruments. It is important to evaluate the direction in which such a movement is going. To the present time there has been much publication and use of tests, but little real evaluation.

A good illustration of this fact is found in our current methods of classifying tests. We speak of tests for arithmetic and for language, spelling tests, tests of reading ability, geometry tests, etc. It is one of the theses of the present writer that we shall direct our movement properly only through a careful *evaluation of the mental processes for which standardized tests are designed.* Clear thinking about the validity of educational scales will be contributed to largely by clear-cut analysis of the mental processes which these scales are constructed to measure.

Tests for habit formation and "information" but not for "thinking."—There are definite reasons for being concerned about the tangent which the educational measuring movement is taking at the present time. Of the more than one hundred published educational tests, less than ten deal with the higher thought processes—processes of reasoning, analysis, logical thinking, problem-solving,

etc. Only one deals with the appreciational and enjoyment outcomes from school instruction.

Let us survey the situation more concretely. Diagram I sets forth a classification of mental abilities and processes. The study of such a diagram shows clearly the direction in which educational measurement is moving. Note the main captions of the scheme: first intelligence—general mental capacity. This represents primarily one's inherited mental organization (paralleling this, of course, one's inherited physical organization). For the classification and evaluation of *educational* tests, however, we are not so much concerned with the *general* mental ability of an individual as we are with the traits which are resultants of training operating on intelligence and physical organization. The writer is aided in his own thinking by throwing these traits into four categories.

First—Traits in which *intellectual* elements predominate.

Second—Traits in which *both intellectual and emotional* elements predominate.

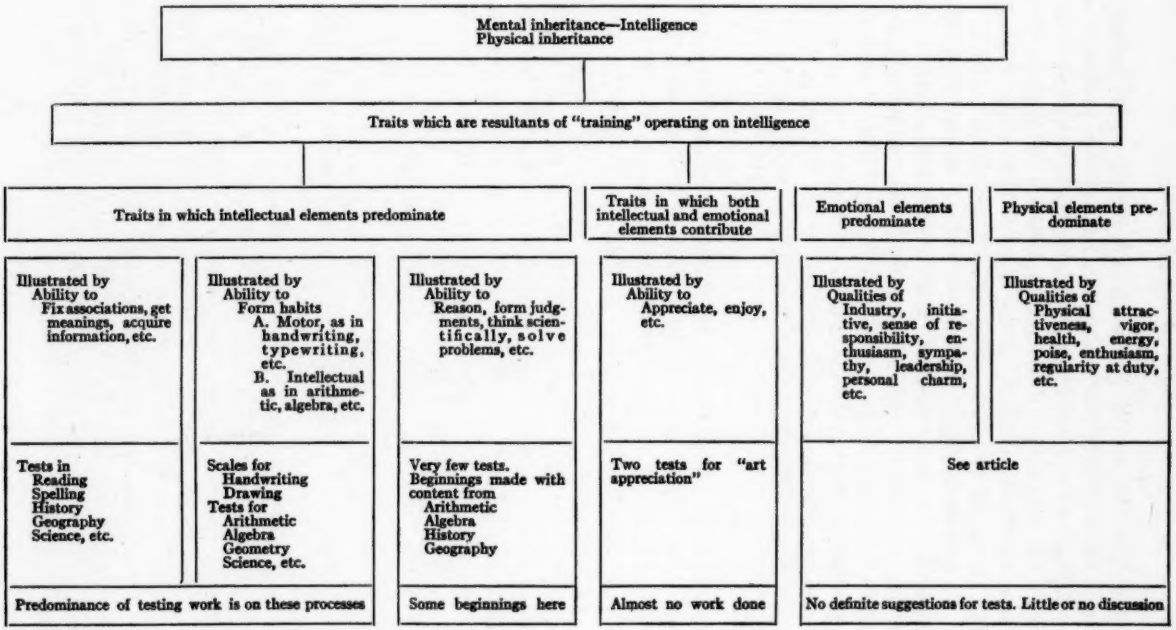
Third—Traits which are primarily "dynamic" and in which the *emotional quality is clearly uppermost.*

Fourth—Traits in which *physical* elements predominate.

What does the study of Diagram I tell us about the measuring movement?—It tells us that we have been concerned in our ten years of development with the measuring of purely intellectual abilities, and, further, that these intellectual processes have been of the "routine" habitual sort. It tells us that we have been concerned with tests for ability to "fix meanings," to "acquire information," to "get ideas"—likewise with the development of muscular and intellectual technique. Of our own hundred scales, the vast majority deal with these "automatic" mental processes. We have many tests for reading ability; several for skill in handling the four fundamentals in arithmetic; a number for ability to acquire information in history and geography; several for automatic skill in spelling foundational lists of words; a number for ability to manipulate formal elements in algebra and geometry; a number of scales for measuring motor co-ordination in handwriting.

Little study of "how to test higher thought processes."—Very little attention, however, has been paid even to those intellectual traits in which the reasoning or problem-solving element predominates. Two or three verbal problem tests in arithmetic and algebra, one

DIAGRAM I


Mental inheritance—Intelligence
Physical inheritance
Traits which are resultants of "training" operating on intelligence
Traits in which intellectual elements predominate
Traits in which both intellectual and emotional elements contribute
Emotional elements predominate
Physical elements predominate
Illustrated by Ability to Fix associations, get meanings, acquire information, etc.
Illustrated by Ability to Form habits A. Motor, as in handwriting, typewriting, etc. B. Intellectual as in arithmetic, algebra, etc.
Illustrated by Ability to Reason, form judgments, think scientifically, solve problems, etc.
Illustrated by Ability to Appreciate, enjoy, etc.
Illustrated by Qualities of Industry, initiative, sense of responsibility, enthusiasm, sympathy, leadership, personal charm, etc.
Illustrated by Qualities of Physical attractiveness, vigor, health, energy, poise, enthusiasm, regularity at duty, etc.
Tests in Reading Spelling History Geography Science, etc.
Scales for Handwriting Drawing
Tests for Arithmetic Algebra Geometry Science, etc.
Very few tests. Beginnings made with content from Arithmetic Algebra History Geography
Two tests for "art appreciation"
See article
Predominance of testing work is on these processes
Some beginnings here
Almost no work done
No definite suggestions for tests. Little or no discussion

preliminary test for thought power and for character judgment in history, one reading test which can be regarded primarily as an intelligence or problem-solving test, mediocre attempts to standardize the difficulty of thought questions in geography—such illustrations are practically all inclusive of the extent to which we have attempted to measure generalized intellectual abilities.

No tests for appreciational and "dynamic" traits.—The diagram shows, furthermore, that we have almost completely neglected the traits in which intellectual and emotional elements both contribute. We have only one example in the field of tests for art appreciation—the Whitford tests. When one turns to those important "dynamic" qualities in which emotional elements predominate, one finds no tests and little or no discussion.

IMPORTANT DISTINCTION: MEASUREMENT OF EDUCATIONAL "PRODUCTS" VERSUS MEASUREMENT OF EDUCATIONAL "PROCESSES"

One gets a clearer idea of the present status of measurement when one studies our educational measuring procedure from another angle. Note that of the traits for which tests are available the process of measurement is altogether that of *measuring an educational product.* In no instance does it involve the *observation of a process.* Skill in handwriting is measured by direct comparison of the product of the pupil's learning with a standardized set of specimens. Spelling ability, arithmetical skill, achievement in algebra, etc.—all these are measured by comparison with an objective right or wrong standard. This distinction is important. It is this distinction of product versus process that is the basis of this article.

It is not so, however, when one deals with the dynamic qualities of initiative, enthusiasm, tact, ability to meet people easily, industry, spirit of co-operation, interest in what others are doing, qualities of leadership, etc. These attitudes and modes of behavior are fundamentally dynamic. They provide the impulse to conduct. They doubtless determine the conduct of the man on the street more completely than do the intellectual functions. Perhaps the most striking characteristic of the average man is that of acting upon "impulse."

These dynamic traits, therefore, must be measured, but how?—Not by scaling the product, for the product of one's enthusiasm, his ability to meet people easily, his leadership, his spirit of co-operation, and his personal and social qualities, are so long in eventuating that their definite measurement in public schools is impossible. Certainly only at remote intervals and by most indirect processes can such important traits be so measured.

Necessity for standardizing methods of observing human procedure. Such traits have to be measured by observing human activity. Measurement now becomes a matter of "judgment" of human character. The perfection of measuring instruments, therefore, consists in standardizing methods of judging.

Methods of judging pupils' qualities are unstandardized and unreliable.—During the past fifteen years scores of investigations have been reported which establish beyond all doubt the great unreliability of present methods of rating pupils' qualities, either those which are intellectual or the dynamic emotional ones. These investigations of "marks" prove the tremendous variability, inconsistency, and unreliability of the marks which have been given through ordinary unstandardized methods. (A standardized procedure in "marking" would consist at the present time in those instances in which objective tests could *not* be used, of (1) ranking pupils, and (2) assigning marks to them in accordance with a theoretical distribution curve.)

The movement to standardize the rating of teaching efficiency.—To the writer's knowledge, there are no published reports proposing the standardization of methods of rating pupils' dynamic qualities. Since 1910 there has been considerable discussion, however, of the standardization of methods of rating teachers' dynamic qualities. We have had the investigations of Elliott, Boyce, Ruediger and Strayer, Beatty, the work of the New York Bureau of Municipal Research, and some others. There are a few outstanding characteristics in the rating devices proposed by these workers. One important innovation is that of enumerating the traits on which a teacher is to be rated—listing the human qualities which are essential for success. In this respect, the movement has contributed helpfully. As for the procedure of rating on these qualities, widely different methods have been proposed. Elliott proposed a long list of qualities with each group of traits and each particular trait assigned

a given number of numerical points, the total being 1,000. On such a scheme a teacher is rated against an arbitrary set of points, the total indicating her position in a group. Boyce uses a similar long list of traits, with some clearer definition, but without applying weights to the separate qualities. He, Beatty, and others who have worked in this field suggest that for each subordinate quality the teacher be assigned to a given group, "excellent," "superior," "medium," etc. In Boyce's scheme, the number of groups is ten; in Beatty's, five.

The enumeration of particular qualities, therefore, together with an attempt to assign weights or to locate in groups represents the status of the movement to standardize the judging of human qualities. Experiments have been reported, with the use of such scales as Elliott's, which show almost zero correlations between ratings made carefully with the scale by different competent judges who have observed the work of the same teacher, sometimes at the same time. Certainly we have little reason to believe that these rating scales on teachers lead to numerical ratings, the reliability of which is great.

The probable error of ratings on such scales is too large.—The most adequate application that could be secured of such rating scales would, in the writer's judgment, result in a Probable Error on a single rating (on a scale of one hundred units) which would be between 10 and 15 points. An illustration will show what this means. Suppose a teacher has been marked 60. If the Probable Error of this rating is 10, it means that the chances are only about 21 to 1 that this mark of 60 is within 30 points of the true mark. Of course such a rating is absurd. From three months' careful investigation of the Army Rating Scale in 1918, the writer has collected evidence which completely substantiates such a statement.

TWO FEATURES TO NEW SCALE PROPOSED HEREWITH:

I. SELF-IMPROVEMENT OF STUDENTS THROUGH SELF-RATING

II. MEASUREMENT BY DIRECT COMPARISON

It is clear, therefore, that we need new methods of rating dynamic qualities, both for students and for teachers.—There are presented in the remainder of this article two suggestions for the rating of high-school students. One has to do with the important problem of

self-improvement on dynamic qualities as well as the rating of students on these qualities by their teachers and principal. The second has to do with a new type of rating scale. Its use leads to a numerical score and one of which the validity is much greater than of those which have been experimented with to the present time.[1]

I. SELF-IMPROVEMENT THROUGH SELF-RATING

If we are to secure permanence in one's development of dynamic qualities, it must be through a type of self-improvement. The first step in self-improvement is to be constructively critical of the extent to which one exhibits certain traits. The assumption is worth making that the clear recognition of one's deficiencies does lead to definite self-improvement. There should be available in the administrative records and devices of a school system methods of acquainting pupils with the qualities which the school and the world at large regard as important. The writer presents on pages 344 and 345 a suggested rating scale for judging high-school students which does this very thing.

It consists of two forms. The keynote of Form A is "Self-Improvement Through Self-Rating." It provides a classification of the dynamic as well as the intellectual qualities of a student. It is suggested for the consideration of school administrators that each pupil should rate himself at least once each year. He should also be rated by each of his teachers and where possible by the principal. The form can be used by the student in analyzing his own qualities. It can be so used by the school, and also by the home. It is addressed to all three groups. It tells the student that "it is important that he stand high on these qualities, that he should rate himself by checking himself in one of three groups." It is concrete in that it asks him specific questions concerning what he does. It holds uppermost in his mind the direct question "to what extent do I do thus and so." However, its phraseology is designed primarily for the teacher, the principal, and the parent. Doubtless, if the pupil were asked to use this form without advice, a few of the questions would be difficult to answer on account of the terminology.

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[1] In a parallel article in the *Elementary School Journal* for May, 1920, the Rating Scale for Judging Teachers in Service is presented.

Name of Student_____

School_____

Class or Grade_____ Date of Rating_____

A Rati ale

SEL

zing a

FORM A—

I. Ability to Learn—To Assimilate New Ideas	Low	Aver.	High
To what extent does he—			
1. Assimilate the material of assignments and class discussions:			
a. Understand directions the first time they are given..			
b. Does his thinking keep pace with the teacher's explanation, even anticipating some things that are said..			
2. Recall facts and principles which have been brought out in the earlier parts of the course...			
3. See relation of these to new phases of the work.....			
4. Tend to weigh statements of teacher and text book, not accepting the first idea that occurs, or is presented to him.....			
5. Ask intelligent questions.....			
6. Exercise mental initiative, discovering new problems and plan ways of working them.....			
Summary Rating.....			

II. Qualities of Industry and Attitude toward School Work	Low	Aver.	High
To what extent—			
1. Does he do school work regularly and on time.....			
2. Does his school work tend to equal the teacher's estimate of his real ability.....			
If not, is this due:			
a. To lack of industry.....			
b. To outside interests (social affairs, athletics, etc.).....			
c. To working to support himself.....			
d. To doing too much domestic work in the home.....			
3. Does he stick to a problem or project until it is completed....			
4. Does he respect disciplinary regulations.....			
5. Does he exercise control, thereby avoiding disturbances in the class-rooms and about the school.....			
6. Is his attitude toward teachers and school work one of hearty interest.....			
a. Is his lack of interest caused by being forced to attend school against his will.....			
Summary Rating.....			

III. Qualities of Leadership	High
To what extent—	
1. Does he exhibit an attitude confidence in his own ability	
2. Does he exercise a wholes influence in the school throu his leadership.....	
3. Are his abilities of leaders due to his ability:	
a. To suggest practical ideas to organize workable pla	
b. To organize people succes ly so as to carry out plans.....	
c. To persuade others by p senting his point of v convincingly.....	
4. Have the faculty already rec nized his qualities of leader by selecting him for position responsibility in the school..	
5. Is his lack of selection due p marily to his immaturity.....	
6. Do you think the pupil learn to develop qualities o lined in 3 *a*, *b*, and *c*.....	
7. Is he chosen to office and gi leadership in school activi *irrespective of his family and cial position;* that is, to w extent is his leadership due ability to organize plans people and carry things thro successfully.....	
8. Does he organize and lead in tivities outside the school (bo and girls' clubs, Y.M.C.A., W.C.A., church organizati etc.).....	
Summary Rating.....	

SELF-IMPROVEMENT THROUGH SELF-RATING

To the STUDENT—Rate yourself on each quality on this form. It will be a first step in improvi yourself. It is important that you stand high in these qualities.

To the PRINCIPAL or DEAN—Let the student rate himself on each question at least once a ye Let the teacher rate the student once each term. A valuable file of these cards can be kept in t office.

Let the teacher also construct a *Rating Scale* on *Form B* below and give each student a Num ical Rating on each group of qualities at least once each year. If the scale is constructed as direct on the reverse side of this card, the average of several teachers' ratings on a student will be a v reliable measure of the student's ability.

To the PARENT—Your son or daughter is rated by the world at large, and so by the school, on j such qualities as these. The student is asked to rate himself on these qualities because it will te to make him improve himself. Your hearty interest in this method will make its use very effecti

RATING BY DIRE PARI

FORM B—The Rating Scale, containing the names of typi nts wh

(Primarily for Teachers and Principa a studen

	I. Ability to Learn—To Assimilate New Ideas		II. Qualities of Industry and Attitude toward School Work		III. Qualities of Leadership	
Best Student....	38	.....	38	.....	38	.....
Better than Average....	30	.....	30	.....	30	.....
Average.....	22	.....	22	.....	22	.....
Poorer than Average....	14	.....	14	.....	14	.....
Poorest Student....	6	.....	6	.....	6	.....
Summary Numerical Rating.....			**Summary Numerical Rating**.....		**Summary Numerical Rating**.....	

ale for Judging High School or College Students

SELF-IMPROVEMENT THROUGH SELF-RATING

zing and rating the student's qualities—by the student himself; by the school; and by the home.

(Rate by checking in one of three groups for each question)

IV. Team-Work Qualities	Low	Aver.	High
To what extent—			
1. Does he enter heartily into school activities outside the class-room; take part in:			
a. School discussion clubs, as the Math. and History Clubs, etc			
b. Literary societies			
c. School social affairs			
d. School newspaper work			
e. School debating			
f. Athletics			
g. Dramatics			
2. In his participation is he interested primarily in the welfare of the whole group (team, club, etc.) and not in his own advancement			
3. Is he loyal to his fellows in both what he says and does			
4. If he does not participate, is this due to necessity for self support, domestic work at home, or physical disability			
5. Does he give hearty *support* to school activities, even though he does not actively participate (*i.e.*, is he a "rooter")			
6. Does he shoulder responsibility for his own acts			
Summary Rating			

V. Personal and Social Qualities	Low	Aver.	High
To what extent—			
1. Is he personally likable (*i.e.*, is he interested primarily in what others are doing)			
2. Does he recognize the importance of cleanliness in personal habits and neatness in dress			
3. Do other students regard him as one of them; that is, does he mix well; likewise not being kept aloof by his fellows			
4. Is he tactful in getting along well with his fellows			
5. Does he appear to be learning how to meet people easily			
6. Does he or she show a *sensible* attitude toward the other sex			
7. Is he scrupulously honest:			
a. In his scholastic work			
b. In his relations to his fellows			
8. Has he developed a sense of responsibility for carrying through projects:			
a. Which he starts himself			
b. Which have been turned over to him to carry out			
9. Is he courteous and respectful to teachers and older people generally			
10. Is he modest and unassuming with respect to his own abilities			
Summary Rating			

If desired, marks given student in School Subjects can be written here

Subjects	19..19..	19..19..	19..19..	19..19..	19..19..	19..19..	19..19..	19..19

PARISON

nts who can be compared with the student to be rated.

students a Numerical Rating)

IV. Team-Work Qualities			V. Personal and Social Qualities		
dent	38		Best Student	38	
r than					
rage	30		Better than Average	30	
ge	22		Average	22	
r than					
rage	14		Poorer than Average	14	
st dent	6		Poorest Student	6	
ry Numerical Rating			Summary Numerical Rating		

TOTAL NUMERICAL RATING

School marks to the present time have been general.—They have been vague characterizations of complex abilities and qualities. Our great need has been that of, first, telling the pupil and the home what traits are regarded as important by the school and the world at large, and secondly, providing a measurement of the pupil by the school on each of these traits. Thus it is in the mind of the writer that each teacher should rate each student at least once each year, perhaps each semester. For the purpose of vocational guidance, a file of such cards on a student would be invaluable. Thus if a student has four teachers, four cards of this kind are sent to the office of the principal each year. It is the first step in acquainting the vocational and educational counsellor with the pupil's personality.

Similarly with the home. The parent is told "Your son or daughter is rated by the world at large, and so by the school, on just such qualities as these. The student is asked to rate himself on these qualities because it will tend to make him improve himself. Your hearty interest in this method will tend to make its use very effective." Doubtless one-third to one-half of the homes to which such a blank would go would be unable to understand certain portions of the form. Certainly the other half will understand, and some will be stimulated to a thorough discussion with the son or daughter of that home concerning the relation between school marks and specific qualities enumerated on the blank.

Several thousand of these rating cards for high-school students were distributed during the fall of 1919.[1] The purpose of their present distribution, and of this report, is to stimulate the development of such forms within local school systems; likewise, to secure experimental data of value on the rating of non-intellectual qualities. After the use of such scales in the ensuing months becomes more wide-spread, the writer will be able to publish, doubtless at the end of the year, a report which will show the advantages and disadvantages of the form, results obtained by the use of it in many school systems, and a revision of the form itself. In the meantime, what is needed most is individual experimentation within local systems. Administrators and teachers should work together on the development of their own rating forms or a trial of such

[1] They can be secured in quantities above 200 at 4 cents each; less than 200 at 5 cents each; samples 10 cents each, from the University of Chicago Bookstore, 5802 Ellis Avenue, Chicago, Illinois.

rating forms as are reported herewith. Some type of card should be developed for the elementary-school children. What is needed most is discussion—interchange of ideas concerning methods of bringing about self-improvement and methods of rating non-intellectual qualities.

II. RATING BY DIRECT COMPARISON

Note Form B of the scale. This consists of the rating scale proper. It is a scheme based upon the writer's experimentation with the Army Rating Scale, for the Committee on Classification of Personnel, October to December, 1918. Intensive experimentation concerning the validity of the Army Rating Scale was conducted in a number of camps. No expense was spared by the committee to render the study complete, scientific, and practical. More than six hundred officers were included in the whole investigation. Large groups of officers came together for three-day experiments, constructing rating scales under the direction of the writer and rating their associates with the most minute care. New forms of scales were experimented with and conditions of acquaintance, instruction, attitude of the co-operators, etc., were standardized in a way that doubtless will never be duplicated, unless, indeed, we have another war under which such conditions can be set up again. These facts are referred to in order to acquaint the reader with the basis for reporting the present scale for students.

The central idea of the scale, that of direct man-to-man comparison, was contributed by a group of workers under the general direction of Professor Scott, formerly director of the Bureau of Salesmanship Research in the Carnegie Institute of Technology. Its modification and adaptation to school practice is the work of the writer, and is based upon the experimentation just referred to.

The new scale reports a method of giving a person a numerical rating (116, 132, 74, etc.) of which the reliability is definitely known, and with which other ratings can be directly compared. Furthermore, it is a rating which cannot be confused with the commonly used percentage marking system of the public schools. This scheme provides a method of rating by which a student is rated on five groups of qualities by being compared directly with five other students, whose names have been assigned definite positions on the scale. These five persons are selected so as to represent respec-

tively (1) the best student the rater has ever known; (5) the poorest; (3) the representative average student; (2) the person midway between the best and the average; (4) the one midway between average and the poorest. A definite number of points is assigned to each of these five positions on the scale; for example: 38, 30, 22, 14, 6, respectively. Thus a person is given a single numerical rating by totaling the points he is given on each of the five groups of qualities.

The scale is so constructed that a student who represents "average" in each will receive a score of 110; one who represents "best" in each will receive a score of 190; and the one who represents "poorest" will receive a score of 30. On the Army Rating Scale, the numbers were 15, 12, 9, 6, and 3. The range, therefore, was 20 to 100, because the values for one of the five groups of qualities were 40, 32, 24, 16, and 8. Our experimentation showed that the numerical range needed to be extended—hence the new scheme.

How to Construct a Rating Scale

Form B

A. Two important facts:

1. It is very difficult to make a rating scale properly. A scale cannot be constructed in less than two or three hours, and ought to be based on eight to ten hours' work.

2. Once made, the scale needs but little modification from year to year.

B. Necessary steps in the construction of a scale.

There are three major steps in constructing a rating scale.

First step.—Write down a list of 25–30 students ranging from the very best to the very poorest in your acquaintance, for each of whom you can answer the questions of Form A of the Rating Card.

Important: The list must *not* contain less than 25 names. It must contain some *very* poor students, some *very* good students, and a considerable number of "average" students.

Second step.—Arrange this list in rank order of merit from the "best" to the "poorest," *separately for each of the five groups of qualities.*

Important: In ranking persons for one group of qualities (say ability to learn), the other groups of qualities must be absolutely ignored. The arrangement of the list in rank order is *the most difficult and important single step in the construction of a rating scale.* Experimentation has shown that to do it successfully, the most effective method is as follows:

1. Locate each person in the list in one of three groups for each question in each group of qualities on Form A. A study of this checking should enable you to rearrange the students on your original list in from three to five groups.

2. Next, therefore, group the students on the original list in at least three and, if possible, five groups—say put in one group the few who are markedly "best"; in another, the few who are clearly "poorest"; and the remainder in a third group

who exhibit various degrees of "mediocrity." If the large mediocre group can next be separated into two or three groups, it will facilitate the next step, viz.:

3. Rearrange the persons in each group so that they stand in exact rank order. This will be most difficult to do in connection with the "average" groups.

4. Complete the final "rank order" arrangement of the entire list by comparing the students near the limits of the adjacent groups, e.g., further direct man-to-man comparison may result in interchanging individuals from, say, a "better than average" to an "average" group.

When the original list is finally arranged in the rank order, you are ready for the

Third step.—Select five persons to occupy the five positions on the scale in each group of qualities. Do this as follows: (1) Make a final decision as to which of the two or three persons in the "rank order" list is really the "best" one you ever knew *and can now use* for purposes of scale-comparison. (2) Select in same way the "poorest" for the scale. (3) From the two or three who stand nearest the middle of the list, decide upon the best one to represent the "average" position on the scale. For (4) and (5) do the same with the ones to occupy the position half-way between the average and best, and half-way between average and poorest. These are called respectively "better than average" and "poorer than average."

Important: Experimentation and experience in the army has shown that the scale can be made properly only by carrying through these major steps *separately for each group of qualities on the scale.*

How to Rate Students on the Scale

The rating is to be made for one group of qualities at a time, giving each person a stated number of points for that quality. It is done by comparing the person's qualities directly with those of the others whose names appear on the scale. Visualize each one as vividly as possible, thus locating a person at a particular point on the scale. Be sure to give him the exact number of points that you think represents his position on the scale. The numerical values, 38, 30, 22, 14, and 6 have been selected to give you considerable opportunity to assign values *between* these set points. For example, in the long run nearly as many should receive 23 or 21 as 22, which is the "average" point of the scale.

Important: In case you are unable to decide clearly between the person you are rating and those whose names are on the scale, examine the results of checking the definitional questions in that group of qualities in Form A. This will enable you to compare them more concretely.

The *total rating* of a person is obtained by adding the number of points given him on each of the five groups of qualities, writing this in the compartment of the card left for the total rating at the lower right-hand corner.

Important: Scales for the rating of students should be made in group conference. All teachers who know the same set of students should come together and construct scales which will contain relatively the same names. *It is fundamentally important* that names assigned to particular scale-positions ("best," "average," "poorest," etc.) be the same on the scales of different teachers. Otherwise the numerical ratings made against these scale-positions by various teachers may not closely agree. If teachers, in conference, can agree on the names of students to go on the scales, numerical ratings made against these will have very great reliability.

ADEQUATE SUPPORT OF HIGHER EDUCATION FROM THE STANDPOINT OF THE STATE[1]

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This question is so broad and has so many possible developments and bearings that it is impossible to attempt to discuss it fully in one paper.

The question perhaps splits naturally into three general divisions.

1. Regular instruction of students resident at state institutions.
2. Extension teaching.
3. Expert advice and guidance of all or part of the activities of the state by a staff of trained men employed by the university.

I shall discuss only the first of these three divisions, as the two latter may vary through such extremely wide latitudes that it would seem unprofitable for me to try to discuss them in a general way.

Public higher education in the United States has defined itself with sufficient definiteness to make it possible to discuss it with some confidence. At the same time there are many points on which there will probably be a wide difference of opinion. The aim of this paper will be to raise several questions as to what our standards should be in our universities and normal schools and what expenditure should be necessary adequately to maintain a state system of higher education.

The unprecedented growth of the great state universities within the last few years has threatened largely to cripple their usefulness. It is impossible to provide adequate instruction for freshman and sophomore classes that are growing by hundreds or thousands a year. There should be some stability in the junior college part of the state university, while any reasonable growth in the senior college, graduate, and professional schools should be encouraged.

[1] Address delivered before the North Central Association of Colleges and Secondary Schools, March 19, 1920, at Chicago, Illinois.

STATE JUNIOR COLLEGES

This condition could be secured by establishing a few state-supported junior colleges in each state. Each should provide for from 500 to 1,200 students, and each should be so articulated with the state university that students applying for admission to the state university, after her quota of junior-college students has been accepted, can be registered by the university authorities in one or another of the state junior colleges. This last condition seems to me to be essential to the value of the state junior college. The majority of boys and girls entering college will prefer to go to the biggest institution, particularly those who go for their own idle pleasure and social advantage. To serve its purpose properly the university must be able without question to place its surplus Freshmen and Sophomores in one or another junior college.

On the other hand, it is not practical to maintain a university without freshman and sophomore classes. A certain amount of junior-college instruction can be given without disadvantage, and a junior college in the university makes it possible for the professors in various professional and graduate departments as well as those in the senior college to control the curricula and instruction in the junior college, and through the standards thus set to control in a considerable degree the standards in freshman and sophomore instruction throughout the state.

One other reason for a sharp distinction between the junior and senior-college work in the state university, and for the establishment of separate state junior colleges, lies in the fact that with our democratic ideals a great many students enter college who have neither the ability nor the scholarly interests to do the work. About 35 or 40 per cent of the entering Freshmen each year drop out before the beginning of the sophomore year. With a freshman class of 3,000 students, which some of our state universities now receive, this means a shrinkage of 1,000 to 1,200 in the first year. It would seem that the distribution of a large part of these underclassmen among several smaller institutions would both somewhat reduce the mortality of Freshmen and relieve the university of this great burden of teaching impossible Freshmen.

THE STATE UNIVERSITY

With this preliminary discussion let us consider what should properly constitute a great state university and what proportion of

its students could be instructed advantageously in state junior colleges.

A study of the enrolment in the various departments of some eight or ten of our greatest universities, public and private, suggests the following as a not improbable distribution of students.

A STATE UNIVERSITY

College or School	Total Enrolment	Senior College, Graduate, and Professional Schools	Junior College	Desirable Junior-College Enrolment at University	Junior-College Students Preferably Enrolled at Other Centers
Arts and sciences	2,500	900	1,600	800	800
Graduate school	500	500	.....	.....	.....
Medicine	200	200	.....	.....	.....
Law	200	200	.....	.....	.....
Dentistry	200	200	.....	.....	.....
Pharmacy	200	125	75	50	25
Engineering:					
Freshman	750	.....	750	350	400
Civil	150	90	60	40	20
Mechanical	300	180	120	80	40
Electrical	200	125	75	50	25
Chemical	200	125	75	50	25
Mining	100	60	40	30	10
Sanitary	100	60	40	30	10
Agriculture	1,500	600	900	500	400
Veterinary medicine	150	150	.....	.....	.....
Commerce and business	1,200	400	800	400	400
Education	1,000	300	700	300	400
Journalism	200	100	100	50	50
Library science	50	50	.....	.....	.....
Landscape architecture	50	50	.....	.....	.....
Architecture and design	150	150	.....	.....	.....
Music	100	100	.....	.....	.....
Total	10,000	4,665	5,335	2,730	2,605

Inasmuch as this must be only an approximation we might perhaps assume that an adequate state university system would enroll 10,000 students in its regular classes September to June of whom about 5,000 would be in the senior college, graduate, and professional schools and 5,000 in the junior college. And, further, that of these 5,000 in the junior college about half, or 2,500, could be advantageously instructed at the university while the remaining 2,500 could best be provided for in two or three junior colleges located in other parts of the state. This would mean a university

of 10,000 enrolling 7,500 at the university and 2,500 at state junior colleges.

A study of the expenditures of the larger institutions seems to indicate that after the number of students in college passes 400 or 500, no further saving in operating costs results from increasing numbers. In other words, we may conclude that it is a matter of relative indifference as to cost whether the 10,000 students considered are instructed in one institution or in four. In fact, it is probable that excellent and thoroughly satisfactory instruction could be given to the 2,500 students in the junior colleges apart from the university at a somewhat lower figure than would be possible at the university.

The expenditures of the larger universities seem also to show that the total expenses are roughly twice the amount of the total salaries paid exclusively for teaching.

THE UNIVERSITY STAFF

With these two assumptions which I believe to be reasonably accurate let us consider the staff necessary for instruction.

A study of the curriculum of a number of typical courses points to 24 hours a week as the average time a junior-college student should be under instruction and 25 hours as the average for the senior-college and professional student.

If the work of the junior college both at the university and at the separate junior colleges is somewhat sharply differentiated from the advanced instruction and put in the hands of men who are primarily teachers, it seems reasonable to expect the men on this part of the staff to teach 300 student-hours a week.

On this basis, 5,000 students receiving 24 hours' instruction a week from instructors teaching 300 student-hours a week would require

$$\frac{5{,}000 \times 24}{300} = 400 \text{ instructors, or 1 instructor to 12.5 students.}$$

Assume this staff to be made up as follows:

25 men at	$5,000	$125,000
50 men at	4,000	200,000
25 men at	3,500	87,500
175 men at	3,000	525,000
125 men at	2,000	250,000
Salaries of teaching staff of junior college		$1,187,500

In the senior college and professional schools it would seem that with careful organization and sympathetic co-operation an institution might be developed in which the maximum research would be done and at the same time the average teaching load would be 200 student-hours a week.

On this basis the 5,000 students in this part of the institution, each receiving 25 hours instruction a week from instructors teaching 200 student-hours a week, would require a staff of

$$\frac{5{,}000 \times 25}{200} = 625 \text{ men, or 1 instructor to 8 students.}$$

The following salary scale would seem reasonable to secure an able staff for this part of the institution.

25 men at	$10,000	$250,000
50 men at	7,500	375,000
50 men at	6,000	300,000
30 men at	5,000	150,000
200 men at	4,000	800,000
150 men at	3,000	450,000
120 men at	2,000	240,000
625 men at		$2,565,000

If these several institutions were under a proper organization, with sufficiently centralized control and intelligent supervision of teaching staff so that the peculiar capacity of each man was known and his best ability encouraged, it would seem possible to give all men having ability for research adequate opportunity, and also to provide sufficient teaching for good teachers who have relatively small ability for research, so that all could be paid good salaries.

With a total salary budget for instruction as developed above of.....$3,752,500
we should probably allow for all other salaries and expenses.....2,747,500
$6,500,000

While this is less than 50 per cent of the total expense (42 per cent), the salaries of the instructors are higher than any institution pays at present.[1]

[1] For comparison, it may be noted that the expenditures other than for teachers' salaries were as follows for a few of our institutions:

1917–18 Columbia	$1,143,960	43.4 per cent
1918–19 Illinois	1,425,383	49.0 per cent
1918–19 Michigan	1,663,518	65.0 per cent
1916–17 Ohio State	1,098,886	64.0 per cent

On the above basis the expenditure would be $650 per year per student, $6,340 per year per instructor; or:

In the junior college	$ 420 per student
In the junior college	5,250 per instructor
In senior college and professional schools	880 per student
In senior college and professional schools	7,040 per instructor

It may be said that a university so large in enrolment or in variety of schools and courses is not needed in a state of small population as it is in a state of larger population. This may be true. On the other hand, Wisconsin and Michigan with approximately half the population of Illinois and Ohio are maintaining state universities of approximately the same size and offering about the same variety of opportunity.

With this in view I am suggesting that any state of two million or more population could profitably maintain a university such as is described above. As the population and wealth increased its per capita cost would decrease.

THE STATE UNIVERSITY PLANT

A study of the educational plants in Iowa in 1916 showed an average of about 250 square feet of college buildings per student, and an average cost of these buildings of about $3.00 per square foot. It would seem that the lowest possible estimate now would be $5.00 a square foot or about $1,250 per student.

This would involve an expenditure for an adequate plant, exclusive of land and all buildings other than those used for educational purposes, of $12,500,000.

If this were distributed between three junior colleges for 833 students each and a university for 7,500 students, the capital outlay for educational buildings each place would be

$1,050,000 for each junior college
$9,350,000 for the university

Educational buildings at

Michigan are valued at	$3,575,000
Illinois are valued at	4,042,000
Wisconsin are valued at	3,500,000
Ohio State are valued at	2,473,000

STATE NORMAL SCHOOLS

What provision a state should make for the training of teachers in the elementary schools is hard to determine. Two methods of approach are suggested:

1. What are the leading states now doing?
2. What provision is necessary to maintain an adequate staff of trained teachers?

The following table is prepared from the Commissioner's Report of 1917. The population given for 1910 is probably at least 10 per cent too small for 1920. The total enrolment given of "students in normal departments" must, at least in some cases, include summer-term enrolment or short-course students, as some of these figures seem extravagantly large. The average enrolment also seems too high for creditable work.

TABLE OF NORMAL SCHOOLS IN TEN STATES

State	Population in 1910	Number Normal Schools	Enrolment 1915–16	Graduates 1916	Enrolment per Million Population	Average Enrolment per School
New York....	9,113,000	10	5,740	2,635	600	500
Illinois.....	5,638,000	5	9,441	862	1,800	1,900
Ohio.....	4,756,000	5	1,464	486	300	300
Missouri.....	3,292,000	5	5,625	1,009	1,100	1,100
Michigan.....	2,810,000	4	5,825	1,842	2,100	1,500
California....	2,377,000	8	5,052	1,960	2,100	600
Wisconsin....	2,333,000	8	6,957	2,064	2,500	800
Minnesota....	2,075,000	5	3,922	729	1,200	800
Nebraska....	1,191,000	4	2,170	391	1,800	500
Washington..	1,141,000	3	2,412	595	2,100	800
Total....	.....	.....	48,608	12,573	.....	.....
Average..	.....	.....	.....	.....	1,560	880

The percentage of enrolment graduated ranged from 9.1 in Illinois to 38.7 in California, with an average of 25.8.

The average enrolment per school is 880. This is certainly too high for the best work. It would seem that the enrolment of elementary teachers in one school should not exceed 500.

The average enrolment per million population is 1,560. But New York and Ohio are both exceptional states: New York because so large a percentage of her population is in New York City and the teachers for the city are trained there; Ohio because the state entered the field of training teachers only within the last few years.

If we except these two states, perhaps 1,800 students enrolled per million population would be a fairer number to take as the desirable figure to which practice points.

This matter can be approached from another angle. A very critical survey of the demand for teachers has recently been made in Ohio. With a present population of about 5,000,000, Ohio has now in service about 30,000 teachers in the elementary schools, or 6,000 per million. Of these about 20 per cent must be replaced annually, or about 1,200 new teachers per million population are needed annually. Approximately half of these should be supplied by city training schools and other agencies such as county normal schools, leaving 600 a year to be prepared by the state. If the 600 to be graduated each year make up 30 per cent of the enrolment, we should provide for an enrolment of 2,000 per million population.

This roughly checks the other figures and we may conclude that a state is adequately provided with normal schools that has three or four schools with a total enrolment of 1,800 to 2,000 for every million population.

The reasonable cost of maintaining and operating normal schools enrolling 2,000 students and graduating 600 annually may be estimated as follows:

Assuming 1 instructor, exclusive of critic teachers, to 15 students, 2,000 students would require 133 teachers.

Assuming that these are being trained in 4 schools we might secure an adequate staff on a salary scale for each school of:

$5,000 each for 5 professors	$25,000
4,000 each for 3 associate professors	12,000
3,000 each for 12 assistant professors	36,000
2,000 each for 13 instructors	26,000
1,800 each for 15 critic teachers[1]	27,000
Total	$126,000
Operating expenses	100,000
Total annual expenditures	$226,000
4 schools at this figure would cost	$904,000

or $\frac{900,000}{2,000}$ = $450.00 per student ($900,000 per million population).

[1] We assume that 1 critic teacher should be maintained for every 10 graduates, and that 600/4, or 150, will graduate from each school annually. Approximately $45,000 is allowed here for the practice school. This should certainly be partly supported by the local community whose children are educated or by tuition paid by pupils. The above estimate, however, makes no allowance for this reasonable source of support of the practice school.

NORMAL SCHOOL PLANTS

The plants for these schools, exclusive of dormitories, will probably cost close to $1,250 per student, $625,000 per school, or $2,500,000 per million population.

It is to be noted that in most cases the number of graduates is relatively far too small in proportion to the enrolment. If the entering students could be selected more carefully and if the capable students could be held the second year it certainly ought to be possible to graduate 600 Sophomores from 700 Freshmen. If this could be accomplished we could cut our enrolment from 2,000 to 1,300 and our schools from four to three, or possibly two.

It would cost for 1,300 students at the rate of $450 per student $585,000 as against $900,000 for 2,000—a saving of $315,000.

Much has been said about the obligation of the state to pay students to attend teacher-training schools. If the right type of high-school graduate could be enrolled in the first place and if 600 of the entering 700 could be retained the second year in the school, each Sophomore could be paid $400 for maintenance and the state could still save money over what is being done at present when 30 per cent or less are graduated.

TOTAL COST OF HIGHER EDUCATION TO THE STATE

Assume that states with populations of from two to five million population provide universities and normal schools on the scale set forth, what would it cost?

Population.....	2,000,000	3,000,000	4,000,000	5,000,000
Cost of university.	$6,500,000	$6,500,000	$6,500,000	$6,500,000
Normal schools....	$1,800,000	$2,750,000	$3,600,000	$4,500,000
Total cost....	$8,300,000	$9,250,000	$10,100,000	$11,000,000
Cost per capita.	$4.15	$3.08	$2.52	$2.20
Cost per $1,000 wealth[1].....	$2.08	$1.54	$1.26	$1.10

or a tax of from 1 to 2 mills would yield the necessary funds.

The above figures do not take into consideration any receipts. It would certainly seem reasonable to expect the fees and other charges to students to yield from 10 to 20 per cent of the total cost.

[1] This last figure is based on the estimate that the wealth in the United States averages $2,000 per capita. The wealth of the United States was given by the Census Bureau in 1912 as $187,000,000,000. An unofficial estimate for 1917 was $220,000,000,000. It seems probable that for 1920 with 110,000,000 population we must have at least $250,000,000,000, or a per capita of $2,270.

A question may be raised as to what number of students the state should look forward to providing with instruction. The preceding figures would provide for 20,000 in a state of 5,000,000. In Ohio it is now quite apparent that within ten years there will be close to 40,000 students in the institutions of higher learning. At present about 16,000 are in higher institutions outside those supported by the state and 9,000 are in state-supported institutions. Of these latter, however, only about 1,500 are enrolled in the state normal schools. With these facts in view it does not seem improbable that Ohio will before many decades be called on to provide for 20,000 students in her state educational institutions.

Education heretofore has been academic, for the few, usually the poor, many of whom went into the church. It has been a charity. It has been humbly administered and we have been proud of large results from small unpromising means.

Today this is largely changed. Tomorrow there is a promise that in this country many will wish an education who now do not desire it. It is more and more becoming a practical means to an end. It means, more and more, larger income, bigger service, finer men and women. More is expected; much more must be spent.

If this paper arouses some thought on the magnitude of the educational problem before us, it will have served its purpose.

THE FUTURE OF THE STUDY OF GERMAN IN AMERICA

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There has been much discussion of late in regard to the proper place to be assigned to the study of German in the curriculum of our schools. During the time of the war patriotic sentiment was inclined to regard the problem as comparatively simple, and current opinion did much to expel the subject from the high schools throughout the country.

To argue against the exclusion of the enemy tongue, in the face of an overwhelming feeling against it, was worse than futile. Attempts to question the wisdom of such procedure, to point out the fact that our failure to study German could have no possible effect on the enemy, but might, on the other hand, become a defect in our own armor, were of no avail. The question as to whether the instruction of German was to be continued was everywhere submitted to popular vote, which almost everywhere refused to support it. In very rare instances could sober reflection muster the temerity to object to the movement on principle, to ask whether the organization of the school curriculum should be entrusted to popular judgment. Viewed in this light the discontinuance of German becomes a matter of serious import and warrants earnest thought and consideration. It requires considerable courage to imagine the result of a popular verdict on many of the subjects in the curriculum of our higher institutions of learning, such as psychology or philosophy, higher mathematics or music. Unfortunately, any subject that lies beyond the bounds of the practical, whose results are not immediately visible and tangible, will remain outside the pale of the layman's appreciation and must look for support among those who by training and inclination are qualified to appreciate the higher values.

Now that the war is happily ended, that international affairs are receding into the background, and our attention is again directed primarily to our own affairs, open-minded discretion counsels the pursuit of those policies which will serve our own best interests.

One of the profound lessons that the war has taught us is that the policy of independent isolation, so proudly cherished by this country, can no longer be maintained. In the political world as well as in the world of commerce, our interests carry us beyond our own borders. Our national life is rapidly assuming a cosmopolitan character, and the study of foreign languages becomes more and more important. The science and scholarship of the future will recognize national frontiers only at the cost of wasted time and energy. More than ever before will students in the various fields of learning find it beneficial to engage in an interchange of ideas and achievement with scholars in other parts of the world, and a knowledge of foreign languages thus becomes an essential part of their equipment. Science, like literature, art, and philosophy is international, but knowledge of foreign languages is necessary to make them universal. In the interchange of knowledge and ideas, quite indispensable to successful international co-operation, lies a special value of modern languages. They offer a medium for the movement of ideas, they advance the diffusion of knowledge, promote sympathy and understanding between the nations, and thus further the cause of international harmony.

These arguments will probably find ready acceptance for French and Spanish and several other foreign tongues that lend apparent cultural or commercial advantages. But what shall we say of German? Is the study of German to be placed on a separate plane?

Educators and persons of deliberation hold the view that when patriotic sentiment is freed from its temporary aversion, German will again be reinstated in the list of modern foreign languages. To one who views the situation objectively it becomes a problem, not of the advisability of maintaining the study of German, but rather of properly controlling it.

Unfortunately the study of German was given a disproportionate prominence in some quarters. This was, no doubt, due in a large measure to a successfully fostered nationalistic pride among people of German extraction, supported, perhaps, by political ambitions that aimed to please the "German voters." This misdirected tendency to keep the German language predominant has been safely overcome by the discontinuance of German in the grades and the careful regulation of the parochial schools.

It is not only possible and desirable but imperative that a clear

distinction be made between the teaching of foreign languages for cultural benefit or for practical ends, and their instruction for the purpose of perpetuating the alien spirit of those who speak them. The intelligence tests given to our army shocked us into a full realization of the fact that the employment of any tongue to the exclusion of English is a real source of danger. It cannot be stated too emphatically that the study of German, as well as of any other foreign language, must be established, not on political, but on sound pedagogical grounds.

Before the war it would have occurred to none to dispute the propriety of including German in the list of foreign languages offered by our schools. Should it be necessary to say that any argument that could have been advanced for its inclusion during that time is quite as valid today as it was then? A knowledge of the German language will be as helpful in the future as it has been in the past, and the ravages of war have robbed the treasures of German literature of none of their splendor. Nor has the disciplinary value of the study been affected by the horrors of the war.

On the other hand, there is one phase of the situation that presents a real difficulty which should be regarded by all modern language teachers as a matter of vital concern. In many of our high schools French and Spanish are now enjoying a great increase in popularity—shall we say at the expense of German? But on the whole, the loss in German has not been offset by the gains in those departments. In a number of schools the ever-present opposition to modern language study has taken advantage of the prevailing sentiment against German to strike a telling blow by banishing all modern foreign languages from the curriculum. This action is bound to prove far-reaching and detrimental in its effect. Students who are required to present a reading knowledge of a foreign language for admission to professional courses will be obliged to delay their preparation until they enter college, and those who may be looking forward to the study of foreign literature must suffer the same handicap.

Moreover, this condition but adds to a weakness in our educational system of which we have long since been mildly conscious. In this country foreign language study has never received the attention and support devoted to it by the foremost countries of Europe. In England, France, Germany, and many of the

smaller countries proficiency in foreign languages has long since come to be regarded as a common qualification of the educated man, while we require of our college graduates, at most, a reading knowledge of one modern foreign language. Here lies a real problem for all friends of modern language instruction, and one that should receive speedy and active consideration by language teachers.

Perhaps it is safe to say that the amount of time and space to be given to the study of German language and literature will depend, in a large measure, on the position that Germany will occupy in the affairs of the world in the future. If the new Germany, purified by the ordeal of war, is governed by the same earnest devotion to science that characterized her scholarship before the war, if she maintains her former efficiency in the application of science to commerce and industry, no country can afford to let her efforts pass unheeded. If she can raise herself to the high level of success which her splendid progress in commerce and her noteworthy contributions in the fields of science, literature, and art in the past would seem to promise, our wilful neglect of her will inevitably redound to our own loss.

The fragmentary information about conditions in Germany that comes to us during these changeful times helps us but little in our effort to penetrate the clouds of unrest hanging over that unhappy country. It is safe to assume, however, that the framework of German society and much of the efficient state organization will endure. A people, who for generations have been imbued with a disposition for discipline, whose popular education has reached so high a level, will not succumb to the temporary confusion incidental to political reorganization. A newer and better social order is to be the beneficial legacy left to the German people by the war, and under the stimulus of greater individual freedom the nation of militarism and materialism may again become the nation of music and art, of philosophy and literature.

If we assume that the German press of today voices the opinion of the people, we must believe that the prevailing view is one of wholesome contempt for the old régime. The leaders of German thought would have us believe that they heartily condemn the principles of the old government which was responsible for their present humiliation, and that they are making a sincere effort to establish a democratic state that will win an honorable place in the

council of the nations. In the words of one of her prominent historians: "Germany will win back her place among the civilized peoples. The profound humiliation, which we are now forced to undergo, will serve for our inner purgation."[1] Another distinguished historian expresses a similar view: "In the age now opening of Anglo-Saxon world-domination, there can be no more talk of German *Machtpolitik*. Germany will now, so far as she still continues to exist as a nation, hold a position in the world as a whole similar to that hitherto held by Switzerland in Europe. That is bitter, but unquestionable."[2] A journalist writes in one of the leading periodicals: "We must enter into our enemies' way of looking at things and prove to them by our policy that we are better than our reputation."[3]

Many extracts of this nature written by men of sober mind and unquestioned integrity might be adduced in evidence of Germany's change of heart. As a matter of fact, we all know or should know, persistent newspaper reports to the contrary notwithstanding, that the old Germany is no more. Some of the old forces guilty of aggression in 1914 are still there, to be sure, but the men now guiding the affairs of the country are the men who have always opposed the policy of *Gewaltpolitik*.

If for the moment we can forget the natural antipathy aroused by the war and look back upon Germany's contributions in the various fields of peaceful human endeavor, we must realize that she will continue as a factor in the intellectual world. Whatever form the political future of Germany may assume, we shall do well to remember that she still is a people of more than seventy millions, whose traditional industry, thrift, and efficiency offer most fertile ground for forces that will have a considerable influence on the trend of world developments.

Upon our judgment in framing our policy in regard to the German people depend important issues for the future of our country. When we see the professions made by their leaders translated into practice, when we find that their first aim is international harmony, we shall benefit by careful consideration of their actions.

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[1] Hans Delbruck, "Politische Korrespondenz," *Preussische Jahrbücher*, Februar, 1919, p. 286. Cf. F. W. Foerster, "Zur Frage der deutschen Schuld am Weltkrieg," *Preussische Jahrbücher*, Oktober, 1919, p. 117.

[2] Friedrich Meinecke, in *Die Neue Rundschau*, Januar, 1919. p. 4.

[3] Wilhelm Heile, in *Die Hilfe*, 8. Mai, 1919, p. 227.

But whether we wish to receive Germany into the League of Nations or prefer to continue the present hostile relationship, we must know her. This means that we must study her language, for without a knowledge of a people's language there can be no adequate knowledge of that people, and the best index to the mind of a nation is the words it speaks and writes. In commerce, as well as in science, there can be but slight progress between those who must remain inarticulate in each other's presence, and in both fields Germany will be our competitor or collaborator.

In this connection it may prove interesting to compare the conduct of the European countries toward this problem of the enemy tongue. They have had the same experiences as we; they too have seen the waves of revulsion rise and heard the popular clamor for the expulsion of all that bore the enemy stamp; but the view prevailing in educational circles in those countries is most reassuring. Without presumption, a brief word may be quoted from a German educational journal: "We must demand of everyone who wishes to be considered an educated person a knowledge of at least one foreign modern tongue. . . . For me it is clear that this one must be English."[1]

A French scholar writes:

> Are there really persons of such slight discernment as to maintain that it is necessary to give up teaching young Frenchmen German after the war? This proposal appears so manifestly absurd to me that I refuse to take it seriously. At all events, we must not allow a single occasion to pass by without reiterating that it is an error. It is a patent fact that anyone who wishes to devote himself to scientific, philological, legal, philosophical, and, of course, military matters must be able to read German and that a sojourn in Germany must be a part of his education. The infamy of Prussia will not extinguish the thought of the German philosophers and savants, nor the prodigious labor of their scholars and organizers who have made Germany what she is.[2]

In England a parliamentary committee appointed during the war "to inquire into the position occupied by the study of modern languages in the educational system of Great Britain" submitted a report that has great suggestive value for us, as may be gathered from the following quotations:

> Before the war German was perhaps the first language from the point of information. In philosophy and in those sciences and quasi-sciences in which

[1] Otto Lohman, "Die neuere philologie und der krieg," *Die Neueren Sprachen*, Marburg, XXIII, 6.
[2] Henri Hauvette, in *Revue de l'Enseignement des Langues Vivantes*, XXXIII, 289.

new knowledge is constantly acquired and general conceptions undergo frequent modifications, no student who wished to keep abreast of the times could afford to ignore German publications. This position was strengthened by the industry and competence of German translators. Important works of learning and literature, produced in languages not generally known, such as Dutch and Russian, were often accessible in German translations. The German supremacy was skilfully fostered by the admirably organized German book-trade, and extended not only to the natural sciences, but to the whole field of philology and antiquities and to a large part of history. From the practical point of view German was second in value to French alone, and on the strictly commercial side probably equal, or even superior to it, owing to the wide extension of German activity and the general use of German in the business of Russia and the Balkan Peninsula. Thus far there is no room for difference of opinion. No doubt as a factor of the first magnitude in shaping the destiny of Europe during the last hundred years, Germany must retain a permanent and compelling interest to the historical student, though the estimate of the causes which have raised her to that position may undergo changes in the opinion of succeeding generations. And on this also there will be general agreement. *After the war the importance of German must correspond with the importance of Germany. If Germany after the war is still enterprising, industrious, highly organised, formidable no less in trade than in arms, we cannot afford to neglect her or ignore her for a moment; we cannot leave any of her activities unstudied.* The knowledge of Germany by specialists will not suffice; it must be widespread throughout the people. A democracy cannot afford to be ignorant. We may indicate one point in particular which is likely to be of importance at the end of the war. It will in any case be impossible to oust the use of German in commerce, even for our own purposes at home, apart from any question of competition in neutral countries. This is only one of many considerations which lead us to the conclusion that it is of essential importance to the nation that the study of the German language should be not only maintained but extended.[1]

Further we find in this report:

Wisdom and prudence demand that the position of German should be improved.

In another connection it states:

Each and all of these countries make contributions to knowledge. Judged by this last criterion, Germany and France stand first, Italy third, and Russia and Spain last.

And, finally, we read:

After France, all these four countries—Germany, Italy, Spain, and Russia—deserve first-class place in the Modern Studies of our universities. When the political situation is more settled the relative values of the four will be more certain, but it is not likely that any one of them can drop out of the first rank.

[1] *Modern Studies: A Report of the Committee on the Position of Modern Languages in the Educational System of Great Britain.* London: 1918.

May we not confidently expect that the spirit indicated by these statements will be reflected in the schools of our country by an early revival of the interest in German language and literature? When we were organizing for war we were careful to study the practice and experience of the Allies. Quite as fitting would it be for us to emulate them in their attitude toward the German language in preparing for a sane and lasting peace.

JUNIOR HIGH-SCHOOL MATHEMATICS[1]

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Within the last thirty years junior high schools have been started all over this country. They aim to break away from the traditions of the past and to reorganize the subject-matter from a social standpoint, based upon sound pedagogical and psychological principles.

Historically our education really began with an organization inspired by the educational institutions of Europe. This gave us three types of schools:

1. The common, or district school, a school for the common people.

2. The college and college preparatory schools. They are of English ancestry and essentially aristocratic.

3. The academy, an upper school inaugurated by the middle class to improve on the district school. It was often college preparatory and finally it either changed to a private preparatory school or a high school.

The system creates class distinction from which we have never really broken away. It is undemocratic.

The graded school was created by a broad democratic movement. It undertook to replace the common school, but because it was borrowed from Europe and was rigid in its organization it has remained in reality an unassimilated factor in American education.

The junior high school plans to eliminate the break between the eighth grade and the high school. Broadly speaking, it combines into one school the seventh, eighth, and ninth grades, or two years of elementary school and one of the high school, thus leaving six grades to the elementary school in which to acquire the elementary concepts and the tools of learning. It aims to break away from the lines laid down at the time the graded schools came into existence. It is an Americanizing movement and one of the most promising movements in education.

[1] Read before the Mathematics Section of the Minnesota Educational Association, November 6, 1919.

There is much to be said in favor of a plan which makes the most important change come at the end of the sixth year rather than at the eighth. For the pupil who continues his studies in the high school as well as for those who do not continue, it is of most importance to be thoroughly grounded in the fundamentals. Six years are quite sufficient to give him mastery of this work. Indeed, evidence tends to show that if pupils were promoted directly from the sixth grade to the high school, they would be able to carry the work successfully if proper methods of instruction were employed. For example, for each year during the last five years one group of pupils coming from the sixth grade of the elementary school of the School of Education of the University of Chicago has taken up the same work in first-year mathematics as the pupils coming from the eighth grade of the elementary schools of the city. The quantity and quality of the work done by this group during the first year are quite as satisfactory as in the other first-year classes. The noticeable differences are, on one side, the greater enthusiasm shown by the seventh-grade group and their marked eagerness to learn, and, on the other hand, the tendency to be superficial, with the result that they forget more easily what they have learned. With proper methods of instruction, if the work is presented to them concretely, and their studying directed carefully, most of it being done in the classroom under the supervision of the teacher, they are able to do and to retain the work now offered in the first year of the high school. In the second-year course this group is distributed among the regular second-year classes. They have shown that they are fully as able as the other pupils to carry the second course and also those of the succeeding years. In this year's senior class they are found among the leaders of the class, both in scholarship and in social activities, and I have already received word from two of our last year's graduates, one in the University of Wisconsin and one in Boston Institute of Technology, to the effect that they are leading their classes in mathematics.

I do not wish to be understood as advocating that we eliminate the seventh and eighth grades and take up the work of the high school at the end of the sixth grade. If high-school preparation were the only justifiable end of the elementary school, this would be worth trying. The real problem is to plan a course which will meet the dominant interest and mental capacity of children during a certain period of growth which begins at about the twelfth year.

The pupil's physical nature is changing. Growth begins to be accelerated. There is an abundance of uncontrolled energy. Boys and girls at this age become highly nervous and a different treatment becomes necessary. They need much outdoor activity. They should therefore have an easy school schedule and little or no home work. Their whole course of study must conform largely to the demands of nature.

Another good reason for having the break between the elementary school and junior high school come at the end of the sixth grade is the interesting fact that twelve-year mentality, as shown by mental tests, is about the point where genuine education can begin—where the individual becomes adjustable to modern civilization. The pupil's mental development is now undergoing a change. The completion of the sixth year of school life marks the close of a distinct period of child life. Normal children at this age begin to develop generalizing power and to be able to do school work that demands it. They begin to form judgments and to inquire for reason and must have material upon which to exercise these powers. It is very important, therefore, that the change from the elementary school to the junior high school should come at the beginning rather than during this period.

Furthermore, this is a period of receptivity. Hence, in their school work these pupils should be given much content and a wide experience. They should thus lay the foundation on which to build their future education.

It is seen that the break between the eighth grade of the grammar school and the high school comes at an unfortunate time for the pupil. The high school starts at no definite point and terminates at no definite point. Adolescence which normally begins with the twelfth year should determine the period of secondary education.

Since a course of study in a subject must conform largely to the demands of nature we cannot proceed arbitrarily in planning the school work for this new institution. For example, in mathematics we cannot simply transfer the material now offered in the senior high school and give courses in abstract algebra and demonstrative geometry. Nor can we expect to be successful by using the methods of the high school. It is altogether possible that some of the work now offered in the high school should be brought down, that some of the material now taught in the seventh and eighth grades of the

elementary school should be retained, and that some of the typical work of these grades should even be transferred to the senior high school. What is really needed is a great deal of research for creating new material in addition to the arithmetic, algebra, and geometry now found in our courses in mathematics. In working out a program we must understand boys and girls of the age entering this period and provide the work best adapted to their needs, abilities, and natural inclinations. We must understand the purposes and limitations of the junior high school; we must know when it begins and how far it is to extend.

There are now a number of textbooks on junior high-school mathematics on the market. In general they comprise the rudiments of arithmetic, algebra, and geometry. A course in arithmetic is usually given first, followed by concrete geometry, after which the study of algebra is taken up. Let us see to what extent such courses satisfy the demands of this period.

It is assumed that the fundamentals of arithmetic needed in the future work have been sufficiently covered in the first six years. We may further assume that this work has been done sufficiently well. Under those conditions we may ask whether a review of arithmetic at the beginning of the course is necessary and worth while. Some years ago the department of mathematics in the University High School felt a need of such a review even for pupils who had completed the eighth grade. A two weeks' review course was planned, only such material being selected as the pupil would meet in his high-school work. This was done by simply omitting the letters in the algebraic problems found in the first-year textbook. In other words the pupils were drilled on the identical arithmetical work which they were to meet in the course in algebra. The results were most disappointing. It was found later that the pupils who had this review were no better able to avoid arithmetical mistakes than former classes. It became evident that thoroughness could not be secured by duplication or repetition. Moreover, drill on elements previously mastered is monotonous and the work is of questionable value. It is a waste of time at the expense of the new work which should be begun as soon as possible. If reviews are needed they must be given by offering opportunities to apply the fundamentals to some useful end, in connection with problems or topics of interest to the pupil. Indeed, some of these junior high-school books contain a wealth of

such problems. Whenever it becomes apparent in the solution of problems that pupils have forgotten certain processes and that they need further drill, that is the time and place to give it, not at the beginning of the course. By thus meeting these arithmetical computations in a large number of new situations, pupils will get a review with a new view. They will not be allowed to forget what they know and will learn to eliminate arithmetical errors. Teachers must therefore welcome frequent opportunities for arithmetical computations. These should always be performed by every pupil in the classroom at his seat and not simply be worked out by one pupil at the blackboard or explained by the teacher. In fact, practice should be kept up throughout the senior high school, and not only in classes in mathematics. Other subjects such as the sciences, where arithmetic is needed to solve problems, should share in the responsibility to give the pupils a wide experience in arithmetical computations.

A similar situation is found in the junior college. College teachers complain that students do not know the fundamentals of high-school mathematics, such as the solution of a quadratic equation. The reason for this is not that the solution of such equations was not taught well in the high school, but that it has not been met in a sufficiently large number of situations.

Even in the high school we find that textbooks for second courses in algebra usually begin with a review of the fundamentals of the first year's work. The same thing occurs in courses in college algebra. All along the line these review courses accomplish little and cause much waste of time.

A second striking feature of the present junior high-school texts is that advanced work in arithmetic precedes the study of geometry and algebra. The principal argument in favor of this arrangement seems to be that there is a decided advantage in having the pupil feel that the work he is about to study in the junior high school is after all not so very different from the preceding work of the sixth grade. However, elementary-school pupils look toward the junior high school as a school which is quite different from the elementary school. They expect, therefore, to take up the study of new subjects. Hence, many of them, especially those who found arithmetic difficult, are greatly disappointed upon finding that they are to have the same type of work in this new school. They would take up a different type of work with more interest and enthusiasm.

Therefore, let there be just enough incidental arithmetic in the first-year course to maintain the pupil's efficiency in calculation, and let the topical study of this subject be postponed to a later period. Another reason for this postponement is the fact that some phases of the course in arithmetic involve more difficult reasoning than the fundamentals of algebra and geometry and may better be given after pupils have become familiar with the elements of these subjects, and when their reasoning powers are better developed.

At present there is a relatively excessive amount of time given to arithmetic, which contains much that is unessential or fundamentally beyond the pupils' experience. Such topics as stocks and bonds, exchange, compound interest, partial payment are things that are foreign to the pupil at this age and are seldom touched upon in future courses. They may well be transferred to the upper classes of the high school, where they should be made elective for those who are interested in commercial work.

We have said that the junior high-school period is a time of experience-getting. Hence the arithmetic studied should relate to things of real interest to the pupil. It should be subsidiary to larger occupational interests. It should be arithmetic of the store, the farm, and industry. It should deal with matters of the home, such as planning family expense accounts on a certain income, saving to buy a lot on an installment plan, incomes from boys' activities. Most of the junior high-school textbooks contain an abundance of problems of the types which provide for the general needs of immediate, not remote, life utilization. Furthermore, the work in geometry and algebra given in these textbooks offers many opportunities and motives for the study of arithmetic. There is a marked agreement as to the correlation of geometry and arithmetic, and algebra and arithmetic. However, the correlation of geometry and algebra is comparatively small.

Assuming that our interpretation of the junior high-school period is correct, and that this is a period of experience-getting, this experience should extend over the whole field of elementary mathematics, arithmetic, algebra, geometry, and even trigonometry. These subjects are not to be taught separately, at least not during the first two years. What is wanted is a wide experience with the mathematical concepts which the pupil builds into a growing structure. All of these subjects contain simple facts which can

easily be mastered by the twelve-year-old pupil. Geometry is experience-getting in space relations; algebra, in abstract quantity relations. Experience gained in either should be used whenever it can be made helpful in the study of the other. When mathematics is taught essentially as one subject, it is possible to keep the important principles as far as possible under review, thus increasing the power of retention. Algebra is not to be taught as an organized science and the "sacred sequence" of Euclid in geometry will have to be abandoned. Indeed this sacred sequence does not longer exist even in the ordinary course in demonstrative geometry. For example, Euclid proved his constructions before he used them. Today every textbook introduces these constructions early and gives the proof later. The real value which the pupil derives from the study of geometry depends more upon the progress he makes than upon the requirements of a rigorous logical arrangement. Similarly, algebra taught as an organized science is to a pupil at this age nothing but a mechanical juggling of symbols, a wearisome iteration of meaningless manipulation, a waste of his time which stunts his intellectual growth. Much of the difficulty in the later courses is due to the fact that the fundamental concepts have never been clear and that too brief a period of time has been allowed the pupil to get clear-cut notions about definite things. As a result much of his knowledge is vague and indefinite. Giving the pupil a wide experience with these fundamentals will make possible a gradual and easy approach to the parts of the subject that are later taught in the high school.

Such material should be selected as proves its worth by actual service in the life of the pupil and such facts should be included as the pupil needs in his other studies. The material is to be arranged as far as possible in psychological order. New terms are to be learned through use and as need for them arises and the work progresses. The method of beginning with definitions and rules makes a course hard to comprehend, is repulsive to the young learner, and should therefore be avoided.

The geometry of the junior high school is not to be demonstrative but the geometry of the classroom, home, field, and park. Intuitional, mensurational, and constructive geometry furnishes the most concrete material we may offer to the pupil. Much of this should be given in the first year. The facts must appeal to the

pupils as valuable information. Free use is to be made of the ruler, compass, and protractor, to give the pupils a chance to be doing things. They measure, they estimate, they feel that the study is a real thing. They discover many new facts by examining the properties of their drawings. They work with them until they are thoroughly familiar, and thus form a basis on which they may build the theoretical work to follow. The introduction to demonstrative geometry should be very gradual. Pupils will reason about geometrical facts because they seem worth reasoning about. They will work hard because boys and girls like hard work, if they see the purpose of it and have a clear understanding of the ends to be attained. They know how to prove things long before they can demonstrate. The first proofs, although not of scientific rigor nor of the form demanded later, are thoroughly convincing. The form gradually grows as need arises. Thus it is possible to develop gradually an appreciation of the need for a demonstrative proof. At first they verify the theorem by measurement. When they understand the difficulty of making accurate measurements they learn to employ informal reasoning in some simple problems. When they realize the danger in incorrect reasoning and feel the needs for accuracy of statement, they are ready to learn to give a rigorous proof. A year's time may be given to the development of each of these abilities.

The algebra of the junior high school should be the outcome of concrete problems. The formulas should be related to real things. Formulas taken from the shop, the trade journals, engineering pocketbooks can be made interesting. Formulas may be used to show the advantage of the algebraic method over the arithmetical method in problems of percentage, discount, and interest. The equation which is the core of the course is a tool for problem-solving. There is to be no symbol juggling. The rules, principles, and processes are rationalized. The operations are a means for solving equations and are introduced as needed.

Geometry will furnish an abundance of concrete material. It should be used freely to make clear abstract algebraic principles which otherwise remain hazy. Many theorems, such as the theorem of Pythagoras, are essentially numerical relations. They furnish formulas for algebraic solution and lend themselves easily to algebraic treatment.

Graphical representation is to be used freely. To avoid an unnecessary accumulation of difficulties, positive and negative numbers are to be studied after the operations with positive literal numbers have been mastered. Much unnecessary material should be omitted.

The quantity of work done in the junior high school should be such that the pupil who enters the senior high school should have had a sufficient amount of work to enable him to complete during the first year the ordinary plane geometry, a considerable amount of solid geometry, and algebra through quadratics.

The methods of teaching and the subject studied gradually should change from those of the elementary school into those of the high school. At first all of the work, later most of it, is to be done in the classroom under the direction of the teacher. The pupil is to be shown how to study in order that he may accomplish his daily task in the time allowed for it in the classroom. The project method is to be used freely because it supplies a strong motive. For this reason, by far the greatest part of the work should be the solution of algebraic, geometric, and arithmetical problems.

For the three years of the junior high school the purely mathematical material of the program should be about as follows.

First Year

Geometry:

Simple graphs used to interpret data, to illustrate algebraic processes, to motivate the study of fractions and the metric system.
Angles and the use of the protractor in drawings.
Accurate drawings according to given directions.
Use of compasses in fundamental constructions.
Parallel, intersecting, perpendicular lines.
Plane figures are studied because they are found in the classroom and elsewhere, e.g., on the familiar solids.
Areas, perimeters of triangles, rectangles, parallelograms, trapezoids, and circles.
Volumes of parallelopiped, cylinder.
Some simple reasoning processes.

Algebra:

Symbols of algebra.
Simple equation in one unknown, used in stating and solving problems.
Formulas of mensuration, shop, trade journals.

Arithmetic:

The geometry furnishes problems in common fractions and in decimal fractions, e.g., scale drawings create need for operations with fractions.

Study of rectangles leads to such problems as plastering, painting, division of land, ladders, rafters, baseball diamonds, indoor surveying, etc. Study of the circle leads to such problems as flower bed, wheels, cistern, race track, parcel post zones. The formula leads to problems of indirect measurement, percentage, interest, discount.

SECOND YEAR

Geometry:

Graphs to illustrate positive and negative numbers, statistics taken from newspapers, almanacs.

Similar figures, problems in heights and distances. Scale drawings. Table of tangents.

Construction of designs.

Many principles of angles and polygons to furnish problems for algebraic solution.

These principles are discovered by accurate construction of figures and by measurement.

Algebra:

The operations as needed in the solution of equations and manipulation of formulas.

Positive and negative numbers.

The equation as a tool for problem-solving.

Fractions of a simple type.

Ratio.

Proportion.

Arithmetic:

Essentials to be reviewed in connection with algebraic topics. Algebraic processes are begun with a review of related arithmetic processes.

Evaluation of formulas.

Fractions and decimals as coefficients in equations.

Pre-estimating results before calculating.

Business aspects of arithmetical applications relating to actual experience.

Problems of percentage, interest, insurance, discount, account.

Problems of the home, school, community, industries.

THIRD YEAR

Geometry:

Congruent triangles. Informal reasoning as a period of transition to formal proofs. Symmetry. Considerable geometry of space.

Theorems and problems of the isosceles and equilateral triangle. Some theorems on circles.

Constructions. Designs.

Proofs of the fundamental constructions.

Accurate drawings of figures from given parts.

Algebra:

Simultaneous linear equations solved by graph and by one of the methods of elimination.

Some factoring: common factor; difference of two squares; trinomial: ax^2+bx+c.

Difficult parts of algebra, such as complicated factoring problems, complex fractions, etc., are omitted.

Variation; formulas.

Quadratic equations solved graphically and by factoring.

Arithmetic:

Final treatment of the more difficult subjects.

Square root of arithmetical numbers.

THE ATTITUDE OF COLLEGE STUDENTS TOWARD TEACHING

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In view of the present shortage of teachers and the extended discussions of the teaching profession it is of interest to learn what the young people are thinking concerning this work.

The Department of Education of Muskingum College recently carried out an inquiry to learn just what the attitude of the student body is toward teaching as a profession.

The following form was used to solicit the information desired:

> We desire to make inquiry as to the attitude of the students toward *teaching as a profession.* A frank and thoughtful statement from those who have before them the possibility of becoming teachers (this statement is desired from all, whether expecting to teach or not) will be a most helpful contribution to this study. Please fill out the following:
>
> 1. Name.....School class.....
> 2. Are you preparing, or expecting to prepare, for teaching?
> 3. What reasons do you give for your decision?

This questionnaire was put before the students at the chapel assembly without previous notice; answers are therefore rather brief. The inquiry provoked renewed interest in teaching, judging from interviews with the department that followed. These interviews revealed the fact that these young people crave an acquaintance with the main fields of modern learning such as liberal arts courses provide, and that if compensation and recognition of all teachers were equal for equal training and experience, teachers would more largely select the age of pupils with which they can work most successfully and take professional training accordingly.

Answers were received from about 75 per cent of the student body and may be summarized as follows:

	Men	Women	Total
Teaching as a profession	27	130	157
Will teach temporarily	23	29	52
Undecided	2	6	8
Will not teach	108	40	148
Total number reporting	160	205	365

Reasons Given	Men	Women	Total
I. Teaching as a profession			
1. Possibility of a life of worthy social service	8	29	37
2. Enjoyment of the work	4	33	37
3. Like children or young folks	3	16	19
4. Always had a desire to teach or feel best fitted for such work	6	25	31
5. It is a coming profession	3	1	4
6. Scarcity or need of teachers	0	11	11
7. Desire to do something and better fitted for, or would like it better than other kinds of work	0	19	19
8. Interest in special subject	2	12	14
9. Relatively good pay for women	0	5	5
10. Especially suitable for women	0	3	3
II. Teaching temporarily			
11. For valuable experience	12	12	24
12. Improvement in a special field or subject	2	1	3
13. Stepping-stone to other social service	1	5	6
14. Earn money for additional education	8	16	24
III. For *not* teaching			
15. Not interested, dislike it	19	5	24
16. Teaching is unremunerative	13	5	18
17. Not adapted to the work	8	6	14
18. Needed at home	0	1	1
19. Other work in view	Approximately all others.		

TYPICAL REASONS QUOTED

Some reasons in full are quoted below to illustrate the abbreviated tabulations above. The numbers will serve to refer the quotations to the corresponding summaries above.

1. "The teaching profession offers an unlimited field of service in training the youth for the highest type of citizenship."
   "I want to do some form of social service and this is the form for which I am best prepared and in which I am most interested."

"It gives one not only contact with the students but with the people of the community. It is a splendid chance for service along many lines."
"A desire to do some useful work."

2. "I enjoy the work."
"I think I shall like this kind of work best."
"I enjoy school work and school life."
3. "I like little children and like to work with them."
"I have a love for young people and a great interest in their development of life and character."
"It has always been my desire to work with young folks, especially children."
4. "I have always wanted to teach because I think that is what I am best fitted for."
"I have decided to teach because I feel that I am better fitted for that work than for any other."
5. "Teaching is a coming profession."
"It is a progressive, interesting profession."
"I believe that under the present school laws there is quite an opportunity in administrative lines in education."
6. "I feel that there is a great need for teachers everywhere."
"Because it is a profession where the ideals of the world are made, it needs workers."
7. "I feel that I would rather teach than do anything else to make my own living."
"I desire to do something and this seems to be the work for which I am best fitted."
8. "I am interested in the work I am taking up and believe there is a need for others to be interested in it."
9 and 10. "I feel that teaching is a profession naturally suited to girls and in most cases women are able to earn a fairly good living while rendering a noble service to humanity."
11. "Experience."
"Experience and money."
"I am expecting to go as a foreign missionary and will profit by the training and experience."
12. "I desire to teach biology because of the good this experience will be in the study of medicine."
13. "I may teach but am hoping to get into some sort of social service work."
"I expect to do social work and may possibly teach in a settlement house."
14. "To earn money to complete my education."
15. "I do not like teaching."
"The work does not appeal to me."
16. "Unremunerative."
"Not enough money, poor methods of advancement."
"Poor returns for the preparation and service demanded."
"Remuneration not enough to live on. Teachers get $85 per month,

coal miners get $200 and strike for more. A teacher is criticized for everything he does by people who forget he is human. He is the first person called upon for contributions to charity and the person least able to afford it."

17. "I am not fitted for the work."
    "I am not adapted to the work."
    "I think I can make better use of my time."
18. "I am needed at home."
19. "Have another line of work in view."[1]

In making a study of the reasons given by young people for the selection of a life work, whether it be teaching or any other calling, one is impressed by the relative emphasis upon "fitness for the work," "enjoyment of the work," "possibilities of service," etc., on the one hand as over against the "money side" on the other. Very few give "money" as the chief reason for the selection or rejection of any of the callings.

No doubt the relative number of men and women interested in teaching will raise some comment. This is partially explained by the fact that quite a few in the freshman and the sophomore classes are preparing to teach in the elementary schools. More than 90 per cent of these are women. Less than 25 per cent of those preparing to teach in high school are men. The percentage of men interested in teaching decreases somewhat from the senior year down to the freshman. The money factor, no doubt, is a background element in this changing ratio.

[1] No effort was made to learn what other professions were under consideration. Most all of those who are not preparing to teach expressed in one way or another that some other line of work was uppermost in their minds. Most prominent among those mentioned were medicine, ministry, agriculture, Y.M.C.A., technical work, art, music, nursing, law, business.

TYPES OF HIGH-SCHOOL STUDENTS

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During the winter of 1919 the principal of the University High School of the University of Chicago referred several boys to the Educational Laboratory who were giving difficulty to their teachers and concerning whom he wished an intellectual diagnosis. These boys were examined by means of the Stanford Revision of the Binet Scale. Results of this examination were reported to the principal and were taken into account in dealing with the boys. By combining the results of the test with the observations of the teachers and with the school marks which the boys received, it was possible to arrive at a better understanding of their cases and to determine more intelligently upon the best mode of treatment than would otherwise have been the case. Putting all these data together it was possible to distinguish several types of cases. Types such as these are undoubtedly met with commonly in the high school, and it is with the belief that a description of these types will be of help to high-school principals generally that an account of them is given.

There are, of course, a certain number of students who get into the high school who are not sufficiently well equipped by nature in intelligence to do the high-school work. The disposition of such cases depends upon whether the high school offers courses which require less ability than the regular academic work and which students may be advised to take. If such courses are not offered, it is useless to retain pupils of this type in the school. The value of intelligence tests in such cases rests upon the fact that it is not always easy without such standardized tests to determine whether the pupil's deficiency is one in intelligence. The teacher sometimes judges a pupil deficient, but the tests show him not to be, and a further trial indicates that his poor grade of work was due to some other cause.

The doubt as to the diagnosis of such a case is illustrated by an extract from a letter from the principal in regard to one of the students here examined: "I am sending to you with this note A, a Freshman in our school. A is reported as being excessively timid; his attitude is of the finest but he is failing in both French and mathematics. There seems to be a hesitancy in his speech. The family seems to be rather nervous, and we are thinking seriously of having A withdraw from the school and would very much like to have your opinion as to his ability." An examination of this boy showed that he was clearly deficient. His intelligence quotient was calculated to be in the neighborhood of .70. While he was over seventeen years of age he could not pass the fourteen-year-old test. His vocabulary was 43 and the standard for fourteen is 50. He was able to give only one difference between a president and a king. He failed in three simple arithmetic problems and in three problems in changing the hands of a clock. Conversation with him indicated that he lacked much of the information that an ordinarily observant boy picks up. His parents did not recognize that he was at all below normal, and it was difficult to persuade them that the school was just in asking him to withdraw. The verdict in the case, however, was clear.

A similar type is represented by B. This was a boy of eighteen years of age who was able to pass only the tests equivalent to eleven years and eleven months making his quotient .75. His reaction may be illustrated in the ball and field test. In this test the child is shown a circle with a gap on one side. The circle represents a field and the instruction is that a ball has been lost somewhere in this field. The subject does not know from what direction the ball has come or with what force. He is to trace a line showing the path he would take to find the ball. B traced a line from the opening to one side of the field and then drew a small quadrilateral figure with one diagonal. The entire figure covered less than a tenth of the surface of the field. This represents a very low type of reaction for a boy of even eight years. The test confirmed the judgment that the boy's poor work was due to lack of ability and he was dismissed from the school.

A somewhat more difficult type of case to diagnose and deal with is the boy who is about on the border line of the ability necessary to carry on successfully the ordinary academic high-school

work. There were three cases which represent this type. In all cases they were older than the normal for the freshman year. The youngest was sixteen years and ten months, the next eighteen, and the oldest nineteen years of age. Their ages alone indicated some deficiency in ability. The intelligence quotient of the three boys was in the neighborhood of .90 which is the lowest limit set by Terman of ability necessary for high-school work. One of the boys, C, was reported to have an excellent attitude and to be favorably regarded by some of his teachers. Others, however, regarded him as a shirker. He was failing in some of his work and his plea was that he had been prevented from doing justice to himself by outside work. He was allowed to remain but is doing work just above the passing mark. The second boy, D, is to be described in the same terms.

The third boy, E, represents a somewhat different kind of case. While his test record is the lowest of the three and he is barely managing to retain his place in his classes, he is very successful in conducting certain phases of student activity. He possesses the social qualities necessary in business dealings and also a certain type of shrewdness which is required. His academic ability is so low, however, that while he will be allowed to continue his high-school work, he will not be recommended for college.

The third type is made up of individuals who are average or better in general ability but whose work is impaired by a peculiarity of temperament or by some other trait of personality than pure intellectual ability. The problem represented in such a case may again be illustrated from the letter of the principal. F's case is as follows: "He was admitted to the high school before graduating from the eighth grade on the basis of our entrance examination, which he passed. He has been with us a month and in that time has been reported twice for doing unsatisfactory work in French. The reason for this is that he does not seem to concentrate and seems to be dreaming. His mother feels that he has a very strong imagination. For example, she reports that he has never played with a toy in the way in which it was made to be played with. I should like to know whether this imagination is inclined to be constructive and valuable, also your estimate of his probable success in the high-school academic course." Such a picture is consistent with the interpretation that the boy is deficient mentally,

and also with the quite different interpretation that he is normal mentally but that he has fallen into bad habits of attention and of mental work. The test indicated that this boy has normal intelligence. He was then interviewed and told that no excuses would be accepted for poor work and his remaining in the school would depend upon his satisfactorily passing his courses. His work immediately improved and he is now reported as doing fair work. Obviously, what he needed was to be held up to a performance which corresponded to his ability.

Another case of a boy whose ability appears to be normal but whose work is not satisfactory has not been satisfactorily dealt with. G was reported by his teachers as being lazy, lacking in concentration, taking life too easily, and having a childish attitude. One teacher was of the opinion that he was a mental defective. However, the test indicated that his intelligence is normal. In spite of this fact, it has not been possible to secure satisfactory work from him. His case is complicated by a speech difficulty and the explanation may be that he regards this as an excuse for the failure to secure satisfactory results in his work. He is now reported to be gradually deteriorating and it seems likely that, unless through some unusual stimulus his attitude can be changed, he will not be able successfully to carry on to completion his high-school work.

In the case of a third boy, H, the difficulty seems to be chiefly a disciplinary one. This boy passed a satisfactory intelligence test but was soon after placed on probation and in another month dismissed. There are undoubtedly a certain number of children who, while they have normal intellectual ability, are defective in control and in their moral attitude, either through defective inheritance or faulty training. This case evidently is to be explained by some such supposition.

The last boy in this group belongs to the wandering-attention type. "He never pays attention in class," one teacher reports, "but always tries to make a disturbance if given a chance. Since I have had him he has given but one good recitation." Another says, "His mind is not on his subject; he needs careful watching." Another, "He is not doing his best and his attitude is shiftless," and finally "He will do no work unless under constant supervision; tries to 'put it over.'" The test confirmed the observation of his teachers that this boy did not lack in ability but that he did lack

in persistence and in concentration of attention. Such a case needs further observation and diagnosis. It is clear that the deficiency might be due to various causes. We have carried the diagnosis one step when we find that the cause is not deficient intelligence. Unfortunately we are not able to say which one of a number of possible causes is present in this boy's case.

Finally, there are two cases which are to be explained apparently on the ground of immaturity. In both cases the mental tests rate them as considerably above the average in intelligence. Their work, however, was only fair. One boy was about twelve and a half years old when he entered and the other thirteen. Neither of them was doing work which was to be expected from their mental age or their intelligence quotients. It has been customary to assume that the younger child is equal to the same work in school as the older child of the same mental age. The difference in physical maturity or in the stage of development has not been considered. There is evidence, however, that different children, even though widely different in ability, pass through certain stages of development at about the same age. If this is the case there are difficulties in classifying younger children with older ones, even though their mental age is the same, which has not been recognized. These boys were able to continue their work, but there seems to be an indication that other work might have been found better adapted to their stage of development.

These cases indicate that different students represent a variety of problems. One of the elements in the problem is the student's general intellectual capacity. The objective measure of this capacity leads us a considerable distance towards the diagnosis of the case. In the final diagnosis and treatment, however, other conditions have to be taken into consideration.

Educational Writings

I. REVIEWS AND BOOK NOTES

Science in the junior high school.—In a book of 243 pages Dr. Hessler,[1] acting-president and dean of the James Millikin University, deals with the subject of science in the junior high school in a simple and straightforward manner. The author discusses every-day problems and phenomena with which every person should be familiar. The material is organized in twenty-two chapters under four divisions, namely, "Introduction," "The Atmosphere and Its Relation to Man," "Matter and Energy in Earth and Sky," and "Science in the Household."

The text is adapted to pupils in the seventh and eighth grades and the junior high school. It is profusely illustrated and contains many experiments. At the end of each chapter is found a list of stimulative questions on the subject of elementary science. The author lays down the premises that science is "the foundation of our modern life" and that "right knowledge is the only sure foundation for right action." The general mechanism of the book is attractive and admirably adapted to beginners. A splendid glossary is appended.

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Word study.—A spelling book designed for the use of high-school students has recently made its appearance.[2] In preparing the work the author made much of recent investigations in spelling, such as those made by Jones and Ayres. A thousand simple words which careful investigation has shown are most frequently misspelled comprise the word list. Two devices are used in presenting the drill words: (1) arrangement in alphabetical order; and (2) printing in script. Besides the thirty pages devoted to drill words, the book contains material on homonyms, antonyms, synonyms, rules for spelling, exercises in pronunciation, common mistakes in speech, growth of the English language, prefixes, suffixes, roots and derivatives, and letter writing. Those interested in a high-school text in spelling will do well to give Miss Swan's book a careful examination.

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[1] JOHN C. HESSLER, *Junior Science.* Book One. Chicago: Benj. H. Sanborn & Co., 1920. Pp. xii+243.

[2] NORMA L. SWAN, *Word Study for High Schools.* New York: Macmillan Co., 1920. Pp. xi+142. $0.72.

Applied sociology.—A sociology with educational application has recently appeared.[1] Part I is devoted to the factors of society; Part II, to social organization; and Part III, to social progress. Population, location, human nature, and communication are each given a chapter in Part I. There are six chapters in Part II, one devoted to each of the following topics: primary groups and congenial groups, the social mind, social classes, organizations and institutions, government, and democracy. Under social progress the author treats such topics as the human episode, heredity and variation, natural selection, telic selection, and cycles of change.

The general plan of the writer is first to give a body of facts relative to a subject and then to apply the given facts and conclusions to education. For example, in discussing immigration, density of population, factors of geographic environment, and a multitude of similar topics, a select body of material is first given on each topic, which, in turn, is followed by a concrete application to education.

There are certain special features of the book which deserve mention At the end of each chapter topics, problems, and references appear. The references are from the fields of education, sociology, history, geography, economics, ethics, and politics. While there are more references at the end of each chapter than anyone studying the book will find time to read, the long lists offer ample opportunity for selection. There does not seem to be enough difference between the topics and problems to justify separating them.

The book is exhaustively indexed. First, there appears an index of authors and books, which, in turn, is followed by an index of periodicals and serials and an index of subjects. All these are carefully compiled and will be of inestimable value to users of the book.

Economics for secondary schools.—There is a great demand just now for suitable high-schools texts in economics. Too many of the existing texts were not written with the viewpoint of the high-school student wholly in mind. A book which purports to be written entirely from this viewpoint has recently been published.[2] Professor Thompson tells us in the preface that he had four ideals in mind in preparing his book. In his own words they are: "To choose for discussion only those topics which are fundamentally important; to push the discussion of laws and principles to a point where every serious-minded high-school pupil would feel a real mental challenge; to illustrate every law and principle by references to historical events and to every-day experiences, and by the use of graphic material; and finally, to show the relation of each law and principle to the industrial activities in which practically every high-school boy and many of our girls must engage."

Economics as a social science is discussed in Part I. Consumption of economic goods is considered in Part II. Problems of production, the exchange of

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[1] FREDERICK R. CLOW, *Principles of Sociology with Educational Applications*. New York: Macmillan Co., 1920. Pp. xiv+436. $1.80.

[2] CHARLES MANFRED THOMPSON, *Elementary Economics*. Chicago: Benj. H. Sanborn & Co., 1920. Pp. xii+420.

economic goods, and the distribution of the social income are the topics treated in Parts III, IV, and V. Parts III and V comprise more than half of the discussion.

The teaching aids found in the book are plentiful and much worth while. At the end of each chapter three sets of exercises and problems appear, also a list of supplementary reading. At the end of the book is a classified course of reading. This is arranged topically. For example, reading-matter is suggested for each of the following topics: general economics; money, banking, and public finance; labor; immigration; socialism and social insurance; tariff; and trusts. Inasmuch as each of these topics is treated in the text this list will be of great service to those who may desire to do extensive reading on a particular one.

In his general organization of the field Professor Thompson has held fast to tradition—consumption, production, exchange, and distribution being his four main divisions. This organization in the writer's opinion is more a textbook one than a teaching one. A strong teacher, however, will be able to make the material in the book conform to an organization for teaching purposes if she does not care to use the one the book contains.

A vigorous statement for vocational education.—A decidedly emphatic volume[1] defending vocational education and written by a vice-chairman of the Federal Board for Vocational Education has just left the press. The author tries very earnestly to show that the old régime of twenty years and more ago was a flat failure in the scheme of education in the United States. There is strong intimation that much of the old system is still in force. He shows how the great World War has helped bring us to our senses in the matter of educating boys and girls in a many-sided way rather than in a narrow way as previously. The plea for reorganization of elementary and secondary education could hardly be put more forcibly than is here given. To the casual reader, however, there seems to be some overemphasis in places; but this only makes one think more carefully. The lay mind has to have something to prick it severely before it will halt long enough to take action.

To give some idea of the attack made upon the traditional teaching of a few years ago, we quote the following: "The greatest advantage of standardization [i.e., making all school work alike], however, from the point of view of cheapness, is that, through its aid, fifty or sixty children can be schooled by a single teacher. By dividing this preposterous number into squads, she can hear one batch of children recite from the prescribed book the preappointed lesson in arithmetic, while a second batch is preparing its cut and dried lesson in geography, and a third is doing 'busy-work,' that polite school phrase for killing time. All this, however, is not education at all. It is school drill of a very meager and unenlightened sort. Of course, it is not wholly without value. Repressive discipline, learning things by rote, and marching about with fifty or sixty other children, all have their useful place in education; but it should be a very minor place. In most schools, however, this insignificant part of education is about all the pupil gets. It is true that they learn to read, write, and cipher after a fashion,

[1] James Phinney Munroe, *The Human Factor in Education*. New York: Macmillan Co., 1920. Pp. ix+317. $1.60.

and that some of the facts which the teacher tries to drive into their heads stick. But the members of one of these overgrown classes are seldom required really to think; they are almost never taught how to use their minds, their hands, their senses, or their wills; and, far from stimulating initiative, the usual public school does all it possibly can to kill initiative, for it practically forbids the pupil to study things, or plan things, or work things out for himself." [Pages 214 and 215.]

The volume is replete with suggestions that show the fallacy of common-school procedure in the past and of very much of the present. On pages 206–7 there are found a few specific statements as to just what should be done in the grades and the adolescent period.

The interesting feature about the book is not that there are any new arguments set forth to spur educators to give vocational training a larger place in the educational program, but is the rather unique way the author has of putting the fundamental propositions that have to do with the human side to education. It is a positive statement that undoubtedly will do what its writer calculated that it would do, namely, stir up resentment and reaction, both of which will enhance a more vital type of education in our public schools.

School music teaching.—The teaching of music in the public schools is quite a different task from that of the other branches and in some particulars decidedly more difficult. It is a task that is especially trying during adolescence when the pupils are "going over fool's hill" as one writer has put it. There has come to hand a new book[1] which should prove to be of genuine assistance in teaching this delightful, but somewhat difficult, art.

For over two decades we have been busy arguing about and reorganizing our common-school subject-matter. Mathematics and general science have undergone very radical changes. Other subjects have been modified a little, but the field of music has hardly been touched. This author has made a signal effort to show how music may be taught in light of the very best information we have today about the new reorganization of our common-school curriculum. He makes the psychological approach, cuts the material down to minimal essentials, sets forth a few specific and definite aims, and displays a great deal more than average common-sense in telling how to deal practically with the subject of music.

The author also shows somewhat conclusively that if music is properly presented, it will have an educative and helpful effect upon one's physical, mental, and spiritual life, one's social bearing, and one's leisure time. It, therefore, has as important a place in the curriculum as any other subject of study. In specifying what is good teaching in music, he mentions some six or seven ideals that have held sway in the past, no one of which will insure good results. Periodicity in the maturing life of the child is noted and proper provision made in the method of teaching music. A very excellent comparison is drawn between the fundamental psychological principles of teaching reading and of teaching pupils to read music. Individual differences in the ability of children to master music are noted by the author and suggestions about how to proceed are clearly set forth.

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[1] KARL WILSON GEHRKENS, *An Introduction to School Music Teaching*. Boston: C. C. Birchard & Co., 1919. Pp. vi+132.

In representing to the reader what has been done in the way of teaching instrumental music to whole groups of children at the same time, the author shows that there is no new good thing connected with the teaching of music of which he is not aware. Any teacher who earnestly uses this book as a reference for her own personal guidance will find that the teaching of music is not so difficult as she once thought, and she will probably be delighted to find the music hour the most pleasant one in the day.

A national system of education.—The reorganization through which education is now passing in the United States is uppermost in every educator's mind, is discussed in every educational magazine and meeting, and is of grave concern to every thinking man and woman who has the future welfare of the United States at heart. The gravity of the situation is due to the fact that the United States became a powerful nation under the old régime in education, and whether it did so because of, or in spite of, this régime is of little consequence to the majority of people. Because we did succeed while using it is coincidental evidence enough for them. But if it be true that we might have been more fortunate had we begun with a program such as is being promulgated today, then how poorly, indeed, can we argue in support of what we have done for religious education thus far in our history.

It is agreed by competent educators that America was fortunate in escaping in the very beginning the complications incident to religious education in our secular schools. Europe has never been so fortunate. But in divorcing religion from the secular program we fell into a very haphazard program of religious education which has nearly wrecked us upon the rocks of individualism and materialism. This is felt so keenly today that some kind of reaction is inevitable and at no late date.

One of the sanest programs yet set forth is that of Professor Athearn.[1] He frankly states that the church cannot ask the state to teach religion, but the church can teach religion at odd hours during the week and on Sunday. The church can and must organize and administrate a national system of religious education that will parallel and correlate with the national secular system which is in process of formation at the present time. He regards the Smith-Towner Bill as a large step in the direction of a unified, national, secular system of education, and accepts it as a challenge to the educational leadership of the church to produce a program which will be equally scientific, equally democratic, and equally prophetic. Such a program he has presented in the inspiring chapters of his timely and vital book. His discussion of national control, or direction, of a system of secular and religious education is extremely worth while at this, the most critical, time in the history of education in the United States.

Teaching as a profession.—In this day when there is considerable insistence upon giving young men and women an understanding of the many callings life has to offer them, it is with genuine pleasure that we note the effort put forth by

[1] WALTER SCOTT ATHEARN, *A National System of Education*. New York: George H. Doran Co., 1920. Pp. xi+132. $1.50.

Yale University in publishing its Vocational Series. These books are written by the most authoritative persons obtainable, and they seek to give the reader all the information at hand, both for and against the different vocations discussed. The volume[1] here reviewed has to do with the profession of teaching. The author says, "To be helpful to one who wishes to decide whether it will be wise for him to adopt teaching as his profession, or to one who has already adopted it and is just entering upon his new work, is the aim of this book." This aim is fully carried out. Some of the author's sentiments are tinged with those of the "old school," but a majority of his thoughts about teaching are strictly up to date and unquestionably true.

No young man should enter a calling for life unless he knows what the calling has to offer him, whether he has the necessary qualifications to make good in this calling, and how he can best prepare to fulfil all the duties connected therewith. These things are clearly set forth in this volume. The book does not deal with comparisons and contrasts between teaching and any of the other professions; it deals strictly with the importance of the great art of teaching. Chapters i to iv are given to a discussion of the advantages, disadvantages, qualifications, and education of the man or woman who wishes to be a teacher. Chapters v, vi, and vii are devoted to instruction and government in the school. Chapter viii gives some of the qualities that are necessary to be an efficient teacher in a college. Chapter ix deals with a few general suggestions that are practical and helpful to prospective teachers, while chapter x shows how many of the local factors in a community may be improved so as to give the neighborhood the very best of schools. The last chapter is devoted to a brief historical account of nine of our greatest teachers in the history of the United States.

Every Step in Canning.—Teachers of domestic science and others will be delighted to learn of a new book[2] which gives in detail all the essentials in canning foods by the cold-pack method. Before the war our nation had grown more or less careless about the canning of foods. The necessities of war forced upon our attention the fact that we were as a people too dependent upon factory preservation of foods. The United States Government gave to our people a new method of putting up foods and little by little this method has become known throughout the land. It is still too little understood by our women and this book will undoubtedly serve a great purpose to spread the gospel of conservation of food products.

The text itself lives up to its title and really does show clearly and plainly how nearly all foods can be kept for a long time. Many things that the average person is prone to believe cannot be canned in the home are here shown to be as easily and as safely preserved as those which we have been used to canning. The author has made a conscious effort to be practical in her suggestions, and therefore fine-spun theories have been omitted. Tables, diagrams, and recipes

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[1] HENRY PARKS WRIGHT, *The Young Man and Teaching.* New York: Macmillan Co., 1920. Pp. xiv+211. $1.50.

[2] GRACE VIALL GRAY, *Every Step in Canning.* Chicago: Forbes & Co., 1919. Pp. vii+253. $1.25.

are put in frequently enough to make the text a useful one. A list of firms furnishing supplies for canning, drying, and preserving is given in the last pages so that if the local dealers are not prepared to furnish the student, school, or home with the required materials, a source of supply is at hand.

The vein of pleased surprise shown in the preface is quite contagious, and the lack of knowledge about canning which she found is told in a way that inspires a domestic science teacher to push forward and help enlighten our high-school girls in the business of food conservation.

Basket Ball and Indoor Baseball for Women.[1]—Basket ball and indoor baseball for women are two games that are rapidly growing in popularity. The book under review fills a long-felt need in that it sets forth the principles of successfully playing these games. Coaches have for some time needed such a guide and it is more than likely that they will find here a presentation of the essential features of these two games which will lighten their labors very appreciably. Experts have here given the gleanings of their long experiences. They have included sixteen excellent illustrations and thirty-seven diagrams, making clear the different points in the game of basket ball. Twelve illustrations and thirteen diagrams are used in making plain the crucial principles of indoor baseball.

Such topics as passing, catching, guarding, shooting, team play, and signals are taken up in connection with basket ball. Fielding, throwing, catching, batting, base running, team play, practice, and signals are discussed in that portion dealing with indoor baseball.

It is believed that coaches, instructors, and players will find this a very helpful handbook in teaching or taking part in these delightful indoor games.

The recreation movement.—An important little pamphlet[2] has just appeared which deals with the subject of play and recreation and the proper use of leisure time. Besides a brief discussion of the history of the recreation movement in America, the pamphlet contains a chapter on each of the following subjects: municipal year-round recreation system, administration, budgets and finances, management of the individual system, the individual playground, neighborhood recreation center, and community activities. There is also an appendix which contains a general bibliography on play and recreation, sample programs for a park playground and picnic ground of five acres, publicity material, and instructions to playground workers. Organizers and supervisors of outdoor playgrounds will find much of practical value in this brief presentation of a subject which is certainly one of the biggest single factors in the constructive social program of the day.

Training teachers of agriculture.—Teacher-training is a subject that has been gaining in emphasis throughout the years. During the period of the war the

[1] HELEN FROST and CHARLES DIGBY WARDLAW, *Basket Ball and Indoor Baseball for Women.* New York: Charles Scribner's Sons, 1920. Pp. xvii+154. $1.50.

[2] *Community Recreation.* New York: Playground and Recreation Association of America, 1919. Pp. 122. $0.30.

teacher-training movement received added stimulus, especially in the field of agriculture teaching, because the country was brought face to face with the need of stimulation of food production. The Bureau of Education has issued a bulletin[1] which presents a series of papers dealing with the problem of training teachers of agriculture both in preparation for and during service.

The Nineteenth Yearbook.[2]—The *Nineteenth Yearbook of the National Society for the Study of Education* was discussed before the society at its annual meeting held in Cleveland during February last. The yearbook appears in two parts. We shall comment on each part briefly.

Part I, "New Materials of Instruction."—One of the most significant tendencies in education in recent years has been the effort to refine and define our educational aims—to particularize our objectives. Along with this tendency to make our objectives definite and specific, there has been growing an insistent demand for a revision of the old materials of instruction and for the production of new instruction materials. In response to the latter demand there have been scattered efforts to produce new curriculum materials. These have appeared here and there in the field of mathematics, reading, the social studies, and nature study. In 1918, the National Society for the Study of Education decided that the cause of education could be promoted by the creation of some central agency which would assemble the scattered efforts in curriculum revision and production, accept the worth-while materials, and devise methods for their general distribution. Accordingly, the society created the Committee on New Materials of Instruction. The purpose of this committee is well set forth in Part I, page 176, of the yearbook. "In fact, it will aim to stimulate the creation of new material. It is not the purpose of the committee to prepare a general outline in advance of the appearance of instructional material. It is not the plan to make a syllabus or to outline general principles. It is rather the plan of this committee to find material in use, provide for its distribution, bring together co-operative criticisms from teachers who have used the material and thus by the inductive method to arrive at reconstruction of the materials of instruction."

The committee wishes to emphasize the fact that the material to be found in Part I of the yearbook represents only a preliminary report. The nature of this preliminary effort is set forth in the following table of contents.

CHAPTER
I. Reading Exercises Based on Children's Experiences.
II. Reading for Children in Non-English-Speaking Families.
III. Reading for Non-English-Speaking Adults.
IV. Tests in Reading as Part of Classroom Routine.
V. Reading Instruction for College Students.
VI. A Book Prepared by Pupils.

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[1] "Training Teachers of Agriculture," *Bureau of Education Bulletin No. 66, 1919.* Washington: Department of the Interior. Pp. 44.

[2] *Nineteenth Yearbook of the National Society for the Study of Education.* Part I. "New Materials of Instruction," pp. 194, $1.10; Part II, "Classroom Problems in the Education of Gifted Children," by Theodore S. Henry, pp. 125, $1.00. Bloomington, Illinois: Public School Publishing Co., 1920.

VII. A Book of Local History.
VIII. Lessons in Local History and Geography.
IX. Lessons Amplifying the Ordinary Textbook. Accounts Found in Geographies.
X. Exercises in Mathematics.
XI. Nature Study.
XII. Community Life.

Part II, "Classroom Problems in the Education of Gifted Children."—Ever since the introduction of the system of mass instruction into our public schools there has been a growing concern lest the individual would be swallowed up in the mass. Educational literature during the last thirty or forty years has been replete with discussions of the problem of adapting the machinery of the schools to the needs of the individual. In his reports to the St. Louis Board of Education and in his addresses before the National Education Association during the late 60's and early 70's, we find Dr. Harris pleading for a better adaptation of the school organization to individual needs. Other men, during and since Dr. Harris' day, have made vigorous pleas for the same cause. The practical outcome of this concern for the individual child has been the institution of various schemes for adapting the school organization to the individual child. Hence, school people have grown familiar with such terms as free progress through the grades, frequent promotions, promotion by subjects, the St. Louis Quarterly Promotion Plan, the Cambridge Double-Track Plan, the Pueblo Plan, the Batavia Plan, the Burk Plan of Individualizing Instruction, and the Fond du Lac Plan, as well as other schemes of adapting school work to individual capacities.

Most schemes for adapting instruction to the individual child have concerned themselves with only the subnormal and normal children. More recently, however, the need of adapting instruction to gifted children has been much emphasized. No doubt, the findings of educational and mental tests have done much to emphasize the need of the adaptation of instruction to the needs of gifted children.

Part II of the yearbook is devoted to the various classroom problems which arise in the education of gifted children. The volume is given over to the following considerations:

CHAPTER
I. Flexible Promotion Schemes as Related to the School Progress of Gifted Children.
II. Special Rooms for Gifted Pupils.
III. The Experimental Room at Urbana.
IV. Results of the Educational Tests.
V. Results of a Practice-Test in Multiplication.
VI. Results of the Mental Tests.
VII. Methods of Teaching as Adapted to the Instruction of Gifted Children.
VIII. General Summary and Recommendations.
IX. Bibliography.

The Memphis Survey.[1]—Among the recent activities projected by the Bureau

[1] "The Public School System of Memphis, Tennessee." *Bureau of Education Bulletin No. 50, 1919.* Washington: Department of the Interior.

of Education is a survey of the public-school system of Memphis, Tennessee. The report of the survey commission has just been completed and appears in seven parts. The complete report appears under the following titles:

Part I, chapter i. An Industrial and Social Survey of Memphis.
chapter ii. School Organization, Supervision, and Finance.
chapter iii. The Building Problem.
Part II, chapter i. The Elementary Schools.
chapter ii. The High Schools.
Part III. Civic Education.
Part IV. Science.
Part V. Music.
Part VI. Industrial Arts, Home Economics, and Gardening.
Part VII. Health Work.

In general the survey reports follow the plan of procedure given below:

1. A discussion of the general problems in the particular fields covered by the survey, together with suggested solutions.
2. The extent to which Memphis has met and solved these problems.
3. Recommendations of the survey commission.

The entire series of reports is well worth careful reading for the rich suggestions which it contains for the reconstruction of school policies and programs. Part I is unique in that it incorporates the suggestions which the teachers contributed on such questions of educational policy as (*a*) politics, the board of education, and the superintendent; (*b*) qualifications of teachers, their improvement, supervision, and dismissal. The suggestions offered by the teachers are sensible and timely and clearly show that much wholesome reform could be attained in school systems if teachers were called into counsel on matters pertaining to educational policies.

Those interested in science instruction in the public schools will wish to acquaint themselves with the commission's recommendation contained in Part IV relative to the relation of science to other subjects, the science curriculum, the administration and supervision of science instruction, the sequence of science courses, and the science equipment.

Part V, dealing with music, contains discussions on such timely topics as the music textbook, the quality of rote singing, training children's voices, the problem of the monotones, the beginning of technical instruction, part-singing, errors in voice classification, the effect of the formal examination, the departmental plan of organization, inadequate preparation of teachers, lack of proper equipment, contrast between negroes and whites, faults of instruction, an intensive music course with a vocational outlook, ways of developing musical interest, conserving and developing the best in negro music, relation between music in the schools and in the community.

In Part VI the following subjects are considered: manual training, vocational education, home economics, and school gardening. Part VII, dealing with health work is given over to a consideration of the following:

1. The school's obligation in educating for vigor and sanity. In this connection a fivefold program is outlined.

2. The physical conditions of Memphis school children. This discussion of physical conditions is carried on in terms of an examination of 600 children.

3. Mental status of children.

4. What is being done in Memphis to provide for the physical needs of children.

5. A plan proposed.

II. CURRENT PUBLICATIONS RECEIVED DURING THE PAST MONTH

A. GENERAL EDUCATIONAL METHOD, HISTORY, THEORY AND PRACTICE

ADAMSON, JOHN WILLIAM. *A Short History of Education.* London, England: Cambridge University Press, 1919. Pp. xi+371. $4.00.

Annual Report of the General Education Board, 1918–1919. New York: General Education Board. Pp. xiv+98.

ATHEARN, WALTER SCOTT. *A National System of Education.* New York: George H. Doran Co., 1920. Pp. xi+132. $1.50.

BUCKNER, CHESTER A. *Educational Diagnosis of Individual Pupils. Teachers College Contributions to Education, No. 98.* New York: Teachers College, Columbia University, 1919. Pp. ix+93.

CUMMINS, ROBERT ALEXANDER. *Improvement and the Distribution of Practice. Teachers College Contributions to Education, No. 97.* New York: Teachers College, Columbia University, 1919. Pp. 72.

FRETWELL, ELBERT KIRTLEY. *A Study in Educational Prognosis. Teachers College Contributions to Education, No. 99.* New York: Teachers College, Columbia University, 1919. Pp. 55.

GEHRKENS, KARL WILSON. *An Introduction to School Music Teaching.* Boston: C. C. Birchard & Co., 1919. Pp. vi+132.

LEWIS, IDA BELLE. *The Education of Girls in China. Teachers College Contributions to Education, No. 104.* New York: Teachers College, Columbia University, 1919. Pp. 92.

Nineteenth Yearbook of the National Society for the Study of Education. Part I, "New Materials of Instruction," pp. 194, $1.10; Part II, "Classroom Problems in the Education of Gifted Children," by Theodore S. Henry, pp. 125, $1.00. Bloomington, Illinois: Public School Publishing Co., 1920.

STRAYER, G. D., and ENGELHARDT, N. L. "Score Card for Village and Rural School Buildings of Four Teachers or Less," *Teachers College Bulletin,* Eleventh Series, No. 9, January 3, 1920. New York: Teachers College, Columbia University. Pp. 22. $0.35.

STRAYER, G. D., and ENGELHARDT, N. L. "Score Card for City School Buildings," *Teachers College Bulletin,* Eleventh Series, No. 10, January 17, 1920. New York: Teachers College, Columbia University. Pp. 45. $0.50.

WILSON, GUY MITCHELL. *A Survey of the Social and Business Usage of Arithmetic. Teachers College Contributions to Education, No. 100.* New York: Teachers College, Columbia University, 1919. Pp. v+62.

B. BOOKS PRIMARILY FOR ELEMENTARY-SCHOOL TEACHERS AND PUPILS

ALLEN, NELLIE B. *The New Europe.* Boston: Ginn & Co., 1920. Pp. xii+435. $1.00.

ARLEIGH, M. W. *Automatic Exercises in Arithmetic.* South Pasadena, California: Crown Publishing Co., 1917. Ten booklets in series; set, $0.50.

ARLEIGH, M. W. *The Jack Straw Primer.* South Pasadena, California: Crown Publishing Co., 1919. Six booklets in series; set, $0.30.

BOWMAN, FLORENCE L. *Britain in the Middle Ages.* London, England: Cambridge University Press, 1919. Pp. x+103. $0.90.

Children's Catalog Supplement, 1916–19. Compiled by Corinne Bacon. New York: H. W. Wilson Co., 1919. Pp. 108. $0.60.

HERRICK, CHEESMAN A. *Outstanding Days.* Philadelphia: American Sunday-School Union, 1920. Pp. 282. $1.35.

Index to St. Nicholas, Volumes I–XLV, 1873–1918. Compiled by Anna Lorraine Guthrie. New York: H. W. Wilson Co., 1920. Pp. 479. $12.00.

MIRICK, GEORGE A., BALLOU, FRANK W., and TALL, LIDA LEE. *Practice Exercises in Mental Arithmetic.* Boston: Ginn & Co., 1920. Pp. xx+115. $0.48.

STONE, JOHN C., and MILLIS, JAMES F. *New Stone-Millis Arithmetic. Primary,* pp. xiv+257; *Intermediate,* pp. xiv+282; *Advanced,* pp. xiv+321. Chicago: Benj. H. Sanborn & Co., 1920.

C. BOOKS PRIMARILY FOR HIGH-SCHOOL TEACHERS AND PUPILS

ALLEN, PHILIP SCHUYLER, and CASTILLO, CARLOS. *Spanish Life.* New York: Henry Holt & Co., 1920. Pp. viii+179. $0.96.

ALLEN, PHILIP SCHUYLER, and SCHOELL, FRANCK LOUIS. *First French Composition.* New York: Henry Holt & Co., 1920. Pp. xxiv+226. $1.00.

BLANCHARD, RAOUL, and TODD, MILLICENT. *Geography of France.* Chicago: Rand McNally & Co., 1919. Pp. 238.

COESTER, ALFRED. *Cuentos de la América Española.* Boston: Ginn & Co., 1920. Pp. vii+236. $0.96.

DAVISON, CHARLES. *Plane Trigonometry for Secondary Schools.* London, England: Cambridge University Press, 1919. Pp. 334. $2.00.

DENSMORE, HIRAM D. *General Botany.* Boston: Ginn & Co., 1920. Pp. xii+459. $2.96.

KNIGHT, EDGAR W. "The Academy Movement in the South." Reprinted from the *High School Journal.* Chapel Hill, North Carolina: University of North Carolina. Pp. 58. $0.50.

MARCIAL DORADO, CAROLINA. *Primeras Lecturas en Español.* Boston: Ginn & Co., 1920. Pp. xii+225. $0.96.

MURDOCH, KATHARINE. *The Measurement of Certain Elements of Hand Sewing. Teachers College Contributions to Education, No. 103.* New York: Teachers College, Columbia University, 1919. Pp. 119.

O'BRIEN, FRANCIS P. *The High-School Failures. Teachers College Contributions to Education, No. 102.* New York: Teachers College, Columbia University, 1919. Pp. vii+97.

PARGMENT, M. S. *Exercices Français. Première Partie*, pp. ix+218, $0.80; *Deuxième Partie*, pp. ix+253, $1.00. New York: Macmillan Co., 1920.

"Proceedings of the High School Conference of November 20, 21, and 22, 1919." *University of Illinois Bulletin*, Vol. XVII, No. 13. Urbana, Illinois: University of Illinois, 1920. Pp. 313.

ROCHELLE, E. *Mon Premier Livre de Français*, pp. xii+64. *Mon Deuxième Livre de Français*, pp. viii+70. *Mon Troisième Livre de Français*, pp. x+94. *Mon Quatrième Livre de Français*, pp. ix+89. Bordeaux, France: G. Delmas, 6 Place Saint-Christoly, 1919.

SANFORD, FREDERICK WARREN, and SCOTT, HARRY FLETCHER. *A Second Latin Book for Junior High Schools.* Chicago: Scott, Foresman & Co., 1919. Pp. xviii+408+81.

STACEY, W. F. *Practical Exercises on the Weather and Climate of the British Isles and North-West Europe.* London, England: Cambridge University Press, 1919. Pp. 64.

TOWER, WILLIS E., SMITH, CHARLES H., TURTON, CHARLES M., and COPE, THOMAS D. *Physics.* Philadelphia: P. Blakiston's Son & Co., 1920. Pp. xv+492. $1.35.

WILSON-GREEN, A., editor. *La Grande Guerre: Récits de Combattants.* London, England: Cambridge University Press, 1919. Pp. viii+182. $1.25.

D. PUBLICATIONS OF THE UNITED STATES BUREAU OF EDUCATION AND SIMILAR MATERIAL IN PAMPHLET FORM

Recent issues of the Bureau of Education:

Bulletin No. 50, 1919—*The Public School System of Memphis, Tennessee*, Parts II, III, V, and VII.

Bulletin No. 52, 1919—*Industrial Schools for Delinquents, 1917–18.*

Bulletin No. 69, 1919—*Proceedings of the Fourth Annual Meeting of the National Council of Primary Education, Chicago, Illinois, February 25, 1919.*

Bulletin No. 76, 1919—*Community Americanization.*

Bulletin No. 77, 1919—*State Americanization.*

Bulletin No. 78, 1919—*Schools and Classes for the Blind, 1917–1918.*

Bulletin No. 2, 1920—*Monthly Record of Current Educational Publications.*

Bulletin No. 4, 1920—*The Problem of Adult Education in Passaic, New Jersey.*

Bulletin No. 5, 1920—*Monthly Record of Current Educational Publications.*

E. MISCELLANEOUS PUBLICATIONS

EGGLESTON, MARGARET W. *The Use of the Story in Religious Education.* New York: George H. Doran Co., 1920. Pp. x+181. $1.50.